

AMERICAN BEE JOURNAL

SEPTEMBER

1914



Beekeepers in Attendance at the Mt. Pleasant, Iowa, Field Meet, July 28

American Bee Journal



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Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.

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Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD
Dominion of Canada, Department of Agriculture, Central Experimental Farm.

OTTAWA, Sept. 5, 1913
Sir:—I am pleased to inform you that the three queens were received in good condition, and have been safely introduced.
(Signed) C. GORDON HEWITT,
Dominion Entomologist.

Oklahoma Agricultural Experiment Station.
STILLWATER, Oct. 7, 1913.
Your queen arrived in first-class condition, and introduced her without any difficulty.
(Signed) PROF. E. C. SANBORN,
State Entomologist.

Extra Breeding Queens, \$3.00; Selected, \$2.00;
Fertilized, \$1.50; lower prices per dozen or more Queens, Safe arrival guaranteed. Write

Member of the ANTHONY BIAGGI,
National Bee-keepers' Ass'n Pedevilla, near Bellinzona,
Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.
Please mention Am. Bee Journal when writing.

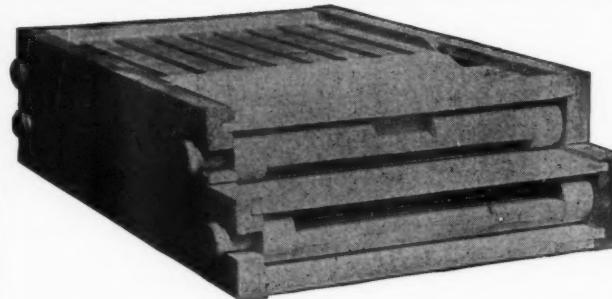
ITALIAN QUEENS

NORTHERN BREED

Superior winterers, second to none. My free list explains it all. Untested, 75c for Aug. and Sept. Select tested, \$1.50. Bees by the pound or half pound. Plans, "How to Introduce Queens," 15 cents, "How to Increase," 15 cents; both, 25 cents.

E. E. MOTTO, Glenwood, Mich.

FEATURES OF ADVANTAGE OF THE ROLLER ENTRANCE BOTTOM BOARD



1. It allows feeding during any time of the day or year—at mid-day or in mid-winter.
2. It controls the mating of the queen so that mispairing is prevented.
3. It settles the robber bee question as the roller can be quickly turned to bring the small entrance into position.
4. It sifts automatically undesirable drones out of the hive, and cages them in the drone trap.
5. It permits ample ventilation at the height of the honey-flow.
6. It can be instantly closed when moving bees in and out of cellars or from one yard to another.
7. It permits undesirable queens to be sifted out by screening the bees through the wire entrance.
8. It prevents swarms from going to the tops of trees or away to the woods when the beekeeper is away.
9. It practically eliminates swarming, as the colonies usually show no inclination to swarm. Why, I do not know.
10. It is adjustable to make a shallow bottom for summer and a deep one for winter.

It contains many other valuable features which will be apparent to any beekeeper upon investigation, and if it is once tried it will always be used.

8-frame size, \$2.00; 10-frame size, \$2.50. Italian Queens, Breeders, \$10 to \$25.

Nothing sold under \$10.

CHAS. G. SCHAMU
INVENTOR AND MANUFACTURER
Box 48, LIVERPOOL, NEW YORK

SHIPPING CASES

SPECIFICATIONS

One-piece cover, bottom and back, one-fourth inch thick and smooth on both sides.

Ends one-half inch thick, smooth on both sides and hand-holed.

Glass rails three-eighths inch thick, smooth on both sides. Lumber free from rot, shake, and loose or rough knots. Corrugated straw board in the bottom and paper covering on top. Where can you find a better case?

One-piece cover and bottom makes a much better and stronger case than a pieced cover or bottom.

Our shipping cases must be seen to be appreciated. Why do you pay more money for an inferior article? Get our prices and save money.

MINNESOTA BEE SUPPLY CO.

100 Nicollet Island
Minneapolis, Minn.

Manufacturers of Dovetail Hives, Sections, Hoffman Frames, Etc.

QUINN'S QUEENS OF QUALITY

Not coming, but are here to stay. Best bee for any climate. Purest of the pure

GREY CAUCASIANS

Bred strictly in the light of Mendel's Laws of Heredity; no guess, but positive results. The pioneer scientific queen-rearing establishment of America. We lead, others may follow. Every queen guaranteed as to purity of mating.

Special isolated mating station on bald open prairie, not a tree within miles—no chance for gypsy drones.

CHAS. W. QUINN
Box 389 - Beaumont, Texas

LARGEST, BEST

and most complete line of Bee and Poultry Supplies ever seen in Illinois at the lowest living prices. Satisfaction guaranteed or money refunded. Established in 1899. Send for our new catalog. Let us hear from you.

H. S. DUBY & SON, St. Anne, Ill.

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

Colorado Honey-Producers' Association
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American Bee Journal

CEDAR WOOD

Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

FROFALCON QUEENS

Everything for the beekeeper. Address.
J. C. Frohlinger, Berkeley, Calif.
Greater San Francisco

Please mention Am. Bee Journal when writing.

BARNES' Foot-Power Machinery



Read what J. I. PARENT, of Chari-ton, N. Y., says: "We cut with one of your Combined Machines, last winter, 500 comb hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNEs
500 East St., Rockford, Ill.

Please mention Am. Bee Journal when writing.

Try My Famous Queens From Improved Stock.

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band, Golden, 5-Band and Carniolan

Bred in Separate Yards

Untested, one, 75c; 6, \$4.25; 12, \$7.50; 25, \$12.50; 100, \$50. Tested, one, \$1.50; six, \$8.00; 12, \$12.50. Breeders of either strain, \$5. Nuclei with untested queen, one-frame, \$2.50; six one-frame, \$15; two-frame, \$3.50; six two-frame, \$20.40; nuclei with tested queen, one-frame, \$1.00; six one-frame, \$17.40; two-frame, \$4; six two-frame, \$23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

D. E. BROTHERS, Attala, Ala.

QUEENS of MOORE'S STRAIN of ITALIANS

PRODUCE WORKERS

That fill the supers quick.
With honey nice and thick.

They have won a world-wide reputation for honey gathering, hardiness, gentleness, etc.

Untested queens, \$1.00; six, \$5.00; 12, \$8.00. Select untested, \$1.25; six, \$6.00; 12, \$11.00. Safe arrival and satisfaction guaranteed. Circular free.

**J. P. MOORE,
Queen-breeders
Route 1, Morgan, Ky**

Fine Italian Queens Warranted

Tested, 75c each in quantities to suit you. Nucleus-Queens strictly A No. 1, reared from select honey gatherers and mated to select drones. These are equal to queens that sold for \$1.00 to \$1.25 earlier in the season. Will sell for 75c each while they last. Give me a trial order. No disease.



**CHAS. M. DARROW
Star Route, Milo, Mo.**

Bingham Bee Smoker

NEW BINGHAM BEE SMOKER

Patented



Nearly Forty Years On the Market

The original bee smoker was invented and patented by Mr. T. F. Bingham in 1878, 1882, 1892 and 1903. The Bingham Smoker is up to date, and is the standard in this and many foreign countries. It has recently been improved, and is the all-important tool of the most extensive honey producers of the world. No other invention in apiculture has been so important, as little could be accomplished without the bee smoker. For sale direct or at your dealers. Postage extra.

Smoke Engine.....	4 inch stove, Weight 1 1/4 pounds.	\$1.25
Doctor.....	3 1/2 "	.85
Conqueror.....	3 "	.75
Little Wonder.....	2 1/2 "	.50

Two Largest Sizes With Hinged Cover A. G. WOODMAN COMPANY Grand Rapids, Michigan

BEE - KEEPER'S NOVELTY POCKET - KNIFE



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size. We have succeeded in getting this knife made in lots from genuine car-van steel. It is especially well tempered and keeps its edge remarkably. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, \$1.00; or with a year's subscription to the American Bee Journal—both for \$1.80; or given FREE as a premium for sending us 3 New subscriptions at \$1.00 each.

American Bee Journal, Hamilton, Illinois.

We Make a Specialty of Manufacturing SECTIONS

They are the Finest in the Land—
None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

**AUG. LOTZ & CO.
Boyd, Wis.**

QUICK SHIPMENT OF QUEENS

 of 3-band stock reared for honey gathering qualities
Untested, June, \$1.00. Later, 75c
Tested, \$1.50. Select tested, \$2.
Send your orders now and be assured of having queens when you want them. **R. A. SHULTS, Cosby, Tenn.**

CAUCASIANS and CARNIOLANS

I was the first to import each of these races from its native land; 31 years experience with Carniolans; 12 with Caucasians. Untested queens, \$1.00; five for \$4.00. Tested, \$2.00 each. **FRANK BENTON,**
P. O. Box 17, Washington, D. C.

American Bee Journal

“Falcon” QUEENS

Three-band and Golden Italians, Caucasians and Carniolans

SELECT Untested, July 1st to Oct. 1st, one, \$.85; six, \$4.50; twelve, \$8.50
 Untested, July 1st to Oct. 1st, one, 1.00; six, 5.50; twelve, 10.00
 Tested, \$1.50 each. Select tested, 2.00.

All queens are reared in strong and vigorous colonies, and mated from populous nuclei.
 Instructions for introducing are to be found on the reverse side of the cage cover.
 A full line of bee supplies and foundation manufactured by us at Falconer, N. Y.
 Write for samples of our foundation and Red Catalog, postpaid.

WESTERN DISTRIBUTERS:—C. C. Clemons, Bee Supply Co., 128-130 Grand Ave., Kansas City, Missouri

OTHER DEALERS EVERYWHERE

Red Catalog, postpaid

“Simplified Beekeeping,” postpaid

W. T. FALCONER MFG. CO.,

Where the good bee hives come from

FALCONER N. Y.

HONEY LABELS

Owing to the many enquiries we have had for Honey Labels, we have put in a line of these for the convenience of our readers.

Send for catalog, giving samples of labels with postpaid prices. We also list **Envelopes and printed Letter Heads.**

American Bee Journal, Hamilton, Illinois.

SPECIAL OFFER

Will sell 300 choice tested Italian Queens at 85c each. These are the very best queens in our 3 apiaries, and will guarantee every queen to give entire satisfaction. If not satisfied within one year we will refund your money.

FRED LEININGER & SON
Delphos, Ohio.

Gleanings in Bee Culture for 1914.

The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913, when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914. For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years. In deciding just what subjects to take up, we have not selected topics at random, for we have been guided by expressions of the majority.

JANUARY 1—Bees and Poultry.—We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry raising from the beekeepers' standpoint.

FEBRUARY—Bees and Fruit.—Our March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another special number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers, who are not especially interested in honey-production, will tell of the value of bees in orchards.

MARCH 1—Beekeeping in Cities.—Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men, we shall have discussed various problems connected with bees in

attics or roofs, and in back lots. We also have a true story of a beekeeper in a city who was fined \$100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. A good story.

APRIL—Breeding.—Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen-rearing both for the small beekeeper and the specialist will be fully discussed.

JUNE 1—Moving Bees.—We, ourselves, expect to move 300 colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

AUGUST 1—Crop and Market Reports.

—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California, etc. These will be published right along as soon as we get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general. No beekeeper should miss this important number.

SEPTEMBER 1—Wintering.—We have not yet learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to feasibility of wintering northern apiaries in the South.

IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are now trying to make the most out of your bees, we feel sure you cannot afford to miss such a wealth of information as the subscription price, \$1.00, will bring you.

The A. I. ROOT COMPANY, Medina, Ohio

American Bee Journal

HONEY AND BEESWAX

CHICAGO, Aug. 18.—Comb honey of this year's make is coming on the market, and best grades command 15c per pound. A little fancy clover in small cases sold at 16c. Amber grades sell at from 10c per pound less, according to kind, condition and color. Extracted, white, ranges from 7@9c; the white clovers bringing highest price. Ambers, 6@8c; all lots being governed by kind, condition and quality. Beeswax sells upon arrival at 35c. R. A. BURNETT & CO.

LOS ANGELES, Aug. 17.—The supply of honey in California is considerably in excess of the demand, which has been extremely light this season. The average prices received for honey so far this year have been about 1c per pound less than were received last year, but this has not resulted in a larger amount of business. Price on wax has dropped 2 or 3c per pound since the keen demand for foundation purposes has ceased. We quote the market on honey in carload lots for eastern shipment about as follows: Fancy water-white sage honey, 7@9c; light amber sage, 5@6c; light amber alfalfa, 5c. HAMILTON & MENDERSON.

CINCINNATI, Aug. 13.—The demand for honey is very light. Some new shipments of comb and extracted honey arriving, but it is

an effort to make sales. For choice and No. 1 comb honey in no-drip shipping cases we are getting \$3.75 to \$4.00 per case, and 8@9c a pound for white extracted honey, and 5@7c a pound for amber extracted, in barrels according to quantity and quality. For choice bright yellow beeswax we are paying 30c a pound; must be free from dirt.

THE FRED W. MUTH CO.

to the case, \$3.25 to \$3.35; No. 2, \$1.00; No. 1 amber, \$1.00 to \$1.25; No. 2, \$2.50 to \$2.75. No. 1 extracted, per pound, 7@8c; amber, 7@7c; dark, 5c. Beeswax, No. 1 at 28c, and No. 2 at 25c per pound.

C. C. CLEMONS PRODUCE COMPANY.

INDIANAPOLIS, Aug. 14.—Very little honey is moving. Much comb has been carried over from last year. The demand is good for extracted, but as yet no prices are established. Producers of beeswax are being paid 32c cash, and slightly higher when goods are taken in payment.

WALTER S. PODUER.

KANSAS CITY, Mo., Aug. 13.—New comb honey is making its appearance in our market. The demand is still light, on account of the hot weather. Receipts of extracted are fairly large, and the demand is exceed-

ingly light. We quote No. 1 comb, 21-sections BOSTON, Aug. 17.—No. 1 and fancy new white comb, 16@17c per pound. Fancy white extracted in 60-pound cans, 11c per pound. Beeswax, 30c. BLAKE-LEE COMPANY.

SAN FRANCISCO, Aug. 20.—Comb honey is not being offered, and the little that is taken up at 16c for fancy. Water-white extracted, 7@7c; amber, 5@6c; dark, 4@4c. Little or no demand. Beeswax, 30c for light, 24@26c for dark.

JOHN C. FROHLIGER.

DENVER, Aug. 15.—We have no more old stock of comb honey to offer. We are selling extracted in a jobbing way at the following prices: White extracted, 8c; light amber, 7c. We pay 32c per pound in cash and 43c in trade for clean yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, Mgr.

NEW YORK, Aug. 14.—It is too early to say now what the new crop of comb honey in the East will amount to, and while all reports point to a short yield, in New York State in particular, the far West will have more than enough to offset the shortage in the East. There are no prices established as yet.

The market for extracted honey is decidedly dull, and buyers are afraid to contract for large quantities fearing that the European war will have a tendency to lower prices, which, we believe, is true, as all the West India honey, Cuban in particular, 90 percent of which has heretofore been sent to Europe, will naturally be dumped on the United States market, there being no shipping facilities to Europe. The market being in such an unsettled condition we cannot ourselves name any prices at present.

HILDRETH & SEGELKEN.

TENNESSEE-BRED QUEENS

42 years' experience in queen-rearing—Breed 3-band Italians only

	Nov. 1 to May 1		May 1 to June 1		June 1 to July 1		July 1 to Nov. 1		
	I	6	I2	I	6	12	I	6	12
Untested.....	\$1.50	\$7.50	\$13.50	\$1.25	\$6.50	\$11.50	\$1.00	\$5.00	\$9.00
Select Untested	2.00	8.50	15.00	1.50	7.50	13.50	1.25	6.50	12.00
Tested.....	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00
Select Tested....	3.00	16.50	30.00	2.75	15.00	27.00	2.50	13.50	25.00
							2.00	10.00	18.00

Capacity of yard 5000 queens a year—Select Queen tested for breeding, \$5

The very best Queen tested for breeding, \$10. 300 fall reared tested Queens ready to mail, \$2.50 to \$10 each.

Queens for export will be carefully packed in long distance cages, but safe delivery is not guaranteed.

John M. Davis, Spring Hill, Tenn.

When You Need Queens

We will be pleased to fill your order. Our business of rearing queens was established in 1886. We know what it means to have a good strain of bees and queens that stands second to none. Thirty-band Italians only—bred for business and free from disease. Tested, \$1.00 each. Untested, 75c; \$7.00 a do.

J. W. K. SHAW & CO., Lorraineville, La.

FARM FENCE
41 INCHES HIGH
100 other styles of
Farm, Poultry and
Lawn Fencing direct
from factory at save-the-
dealer's-profit-prices. Our
large catalog is free.
KITSelman Bros. Box 85
Muncie, Ind.

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CENTS
A ROD

PONTIAC ENGRAVING CO.
ARTISTS
ENGRavers-ELECTROtypERS
542-550 S. DEARBORN ST.
PONTIAC BLDG. CHICAGO.

NEW ENGLAND BEE KEEPERS
Everything in Supplies
New Goods. Factory Prices
Save Freight and Express Charges
CULL & WILLIAMS CO.
Providence, R. I.

Miller's Strain Italian Queens

By return mail or money refunded. Bred from best RED CLOVER STRAINS in the United States. In full colonies, from my SUPERIOR BREEDERS, northern bred for business; long tongued; leather color or three-banded; gentle; winter well; hustlers; not inclined to swarm; roll honey in. Untested, 1, 75c; 6, \$4.00; 12, \$7.50. Select untested, one, \$1.00; 6, \$5.00; 12, \$9.00. A specialist of 17 years' experience. Safe arrival and satisfaction guaranteed.

I. F. MILLER, - BROOKVILLE, PA.

"Scientific Queen-Rearing"

No other book compares with this one written by Mr. G. M. Doolittle. He is an expert in the business. It tells just how the very best queens can be reared. Bound in cloth. By mail, \$1.00; or with the American Bee Journal, one year—both for \$1.60. In leatherette binding, 75 cents, postpaid; or with the American Bee Journal one year—both for \$1.25. Send to the American Bee Journal.

"NUTMEG" ITALIAN QUEENS

By return mail.

AFTER
June 1st
untested
\$1.00



April
& May
queens
tested
\$2.00

A. W. YATES
3 CHAPMAN ST.
HARTFORD, CONN.
Write for prices by the hundred.

These Experts Have a Hand in All the Lewis Beeware You Buy

IS THIS WORTH ANYTHING TO YOU?

When you consider buying Bee Supplies, ask yourself these questions:

- Where can I buy (not the most) the best for my money?
- What kind of material will I get?
- What sort of workmanship will be furnished?
- How will these goods be packed?
- Who are making and standing back of these goods?
- What are their facilities for distribution?

— HERE IS THE ANSWER : —

The G. B. Lewis Company has been in the business of manufacturing bee supplies for forty-one years. It has grown from a carpenter shop to a plant covering nearly six acres of ground, with an annual output of 30,000,000 sections and 100,000 hives. During all the years, in the face of advancing prices on material and labor, the scarcity of suitable lumber, competition of cheaper and inferior goods, it has had many opportunities to cheapen its product at the expense of quality. But it has steadfastly stood by its guns, maintaining one standard of quality and workmanship. **LEWIS BEEWARE** is the same today, was the same yesterday, and will be the same tomorrow.

Now, what about the workmanship in these goods? What skill do they represent? In a word, what is their personality? The business has been under one management, and the lumber has been bought by one buyer for twenty years. He is still managing the business and buying the lumber. The head mechanic came into the factory when a boy. He has been supervising for thirty-six years. The Bee-hive superintendent has been devoting his life to making Bee-hives for thirty years. The Section boss has been watching the Lewis Section machinery and output for twenty-nine years. These men represent the skill, the brains and the conscience that go in the goods. We ask you again—**DOES THIS MEAN ANYTHING TO YOU?**

A WORD ABOUT LEWIS PACKING—The Lewis Company also make a business of Packing Boxes; therefore, they know how goods should be packed. A patent woven wood and wire package, made only by the Lewis Company, is employed largely in packing. This makes the package light, compact and damage proof.

WHO IS BACK OF THESE GOODS?—The **LEWIS COMPANY** has for forty-one years stood back of every transaction it has ever made. On examination of Lewis goods, if they are not as represented, you are not asked or expected to keep them. This is our guarantee, and applies to Lewis distributing houses as well as the factory. The Lewis Company has a reputation for fair and square dealing second to none.

LEWIS BEEWARE may be obtained almost at your own door. Thirty distributing houses located at convenient points throughout the United States and foreign countries are there to serve you.

Our 1915 catalog will be ready for distribution at the usual time.
Send for one giving name of distributor nearest to you.

G. B. LEWIS COMPANY

Manufacturers of Lewis Beeware
Watertown, Wisconsin, U. S. A.



(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1870.)

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., SEPTEMBER, 1914

Vol. LIV.—No. 9

EDITORIAL COMMENTS

Caring for Super Combs

Under this title, our practical and able Canadian correspondent, Mr. Byer, favors leaving piles of supers in the yard during the summer, to have the spiders protect them against the moths. However well it may succeed in Ontario, it has been a failure with us. The least little crack in which the moth may be able to lay its eggs is sufficient to insure a big crop of fat worms on the inside.

We prefer to keep the empty comb supers in the honey house, using either sulphur fumes or a rag dipped in bisulphide of carbon, from time to time. If the bee-house is allowed to become as cold as possible during our cold winters, little is to be feared from the moths unless the combs have been exposed outside afterwards.

"A Modern Bee Farm"

We are in receipt of a copy of the 5th edition of this work, by Samuel Simmins. This author, living in Sussex, England, is well known to many of our readers, for he is the writer of several works on the bee, the most prominent of which is probably his "Non-Swarming System," 1886, which is embodied in the present work. This contains 479 pages and 15 plates.

Space forbids our going into details concerning the book. We wish, however, to take notice of one or two statements. Mr. Simmins concurs with Dr. Carton (A. B. J., April, page 127) in the assertion that "the presence of

foulbrood in a hive is an evidence of low vitality." He asserts that "the spores of foulbrood need not be dreaded, as they may be destroyed by a most simple and efficacious process, which is that of causing them to germinate where such germs find no congenial soil; as also where a suitable antiseptic then immediately acts upon the successive germs so that they have no power of reproduction, or of maintaining their own existence."

His method is to keep the colony queenless until all diseased brood has been cleaned out and treating it with "Izal solution." As Mr. Simmins does not seem to differentiate between American and European foulbrood, we wonder whether the numerous cures he reports did not refer to the latter. Izal is also recommended by him for Isle of Wight disease, besides changing queens and adding healthy brood.

As the word "Izal" is not found in any dictionary or encyclopedia that we possess, or even in the United States Dispensatory, we took the trouble of writing Mr. Simmins to enquire about it. We were then informed that "Izal is a disinfectant, an emulsion of izal oil—obtained in the coking of coal in especially constructed coke ovens, at a low temperature with a certain proportion of air." It is a British proprietary drug, also kept for sale in the United States.

Regarding Isle of Wight disease, Mr. Simmins makes the assertion that it is not a disease of the bowel, because it is generally found only in the adult

workers and in neither the queen nor the drones. He calls it "infectious paralysis." He asserts it can be cured and gives his methods.

In the British Bee Journal of July 16, page 286, in a reply made by the editor to a correspondent who claims to have cured this malady, the editor replies: "At present there is no known cure for Isle of Wight disease." Who is right?

Were it not that Mr. Simmins is an old and experienced apiarist, we should have hesitated to mention these statements, especially as we have very little faith in the value of any disinfectant for brood diseases. But it is the function of a bee journal to bring these matters before the public. "A Modern Bee Farm" is worthy of a place on our shelves, even if Mr. Simmins' cure methods should not prove sufficient in all cases.

The Temperature of the Colony

Bulletin No. 96, of the Department of Agriculture, with the above title, is before us. It is the account of a study, made in 1908, by Prof. Burton N. Gates, now President of the National Association, at that time Apicultural Assistant at the Washington Bureau of Entomology.

This account gives not only the different temperatures recorded on a colony of bees at different seasons of the year, it also gives the amount consumed by a colony during winter, from day to day. The colony which served for the experiment consumed 11 pounds of honey in four months, November to February inclusive. The daily average was 43.5 grams, or nearly 1½ ounces. An interesting fact is that at three different dates in November the colony gained instead of losing. The gain, which was of 20 to 40 grams, was evi-

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dently due to the gathering of moisture, for the weather was damp. This confirms the experience of old apiarists, that combs of honey, when they become cold, act as a pitcher of cold water in a warm and damp atmosphere, and condense the moisture.

The temperature of the cluster in cold weather is variously reported at from 68 to 91 degrees F., while in the active breeding season it fluctuates between 93 and 95 degrees.

The report contains several interesting experiments such as the effects of storm and wind on the temperature of the colony, the effect of transportation in warm weather, of disturbance by the apiarist in winter days, of the flight of the young bees (play flights) on sunny days, etc. It is worthy of careful study. It may be obtained from the Department of Agriculture in the usual way.

Bulletins for Beekeepers

"Honey Bees as Pollenizers," by Mrs. Susan M. Howard, and "Soft Candy for Bees," by Prof. Burton N. Gates, President of the National Association, are both published by the State Board of Agriculture of Massachusetts, and we are kindly informed by Prof. Gates that they may be had by our readers if applied for. Address him at Amherst, Mass.

We have also received Bulletin No. 3, on "Brood Diseases of Bees," by the Iowa State Inspector, Mr. Frank C. Pellett, of Atlantic, Iowa. The bulletin may be had from the inspector above named.

San Francisco in 1915?

According to a report just received, already 237 national and international congresses and conventions have chosen San Francisco for their meet-



H. W. HECHLER IN HIS APIARY AT HEDRICK, IOWA

ing place in 1915. We see no reason why the National Beekeepers' Association should not help swell the list.

Invitations have been extended by the management of the Exposition, by the California Association, and many beekeepers have in personal letters expressed the hope that San Francisco would be chosen.

Diseases of the Adult Bee

In our editorial upon "A Modern Bee Farm," we have said that Mr. Simmins calls the Isle of Wight disease "infectious paralysis." We have for a long time thought that this disease was the same as our "paralysis" or the "May disease" of Europe, characterized by the appearance in great numbers of the *Nosema apis* of Zander. But now come additional descriptions of various diseases, of the same nature. In the May and June numbers of "Le Rucher Belge," Mr. Bage describes not

only the *Nosema apis* of Zander and the *Bacillus gaytoni* of Cheshire, but several forms of "dysentery" or "refertum," which are called "refertum pollinis, fertum viscini, fertum dextrini, fertum nutriciae," besides artificial poisoning and natural poisoning. However, "dysentery" should not be described as "refertum," for the latter word is Latin, and means "full, fullness." The fullness of the bowels in these cases is rather constipation than dysentery. But if only half of those diseases are specific and distinct, we are on the way to much valuable information.

We wrote to Europe for greater light upon the subject, but the present unfortunate war conditions are absorbing the attention of our friends across the Atlantic. Our sympathy goes to them. Nations need to do away with czars, kaisers and emperors. We have a few jingoes in America, but they would never lead us into such insanities as the present European war.

Humble Bees in New Zealand

Bulletin No. 46 (New Series), of the New Zealand Department of Agriculture, is just at hand. It contains 30 pages with illustrations, and has for its subject, "History of the Humble Bee in New Zealand." Our old friend, Mr. Isaac Hopkins, for many years government apiarist in that country, is the author. Mr. Hopkins is an authority on this subject as well as on the honey bee. He was among the first to import humble-bees into New Zealand.

Previous to 1870, the farmers of New Zealand were able to get but little seed from red clover, owing to the absence of this bee. Such seed as was set, Mr. Hopkins states, was due to the presence



APIARY OF E. T. CARLSON AT ALEDO, ILL.

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of the honey-bee. In 1872-73, several importations were made but with little success, and it was not until 1884-85 that the first humble bees were successfully introduced. Their propagation was rapid. Within a year some of these bees were reported as far as 100 miles from the place where the first ones had been liberated.

The increase in amount of seed harvested from the red clover increased in direct proportion to the number of humble-bees, until at present large quantities of seed are harvested. Such was the case also with a few different grasses which had been difficult of propagation previously.

Mr. Hopkins believes that it is advisable to make further importations of several species of humble-bees which are not yet found in this country in the hopes that they will be better able to stand the climate of certain portions where red clover is little grown for seed at present, owing to the absence of this insect.

In the course of the booklet, life history of the humble-bee is given with a description of the queen, size of colo-

nies, method of hibernation, disease germs, etc.

The appendix contains remarks by Mr. W. W. Smith, F. E. S., and also has a description on each specie of the humble-bee.

The bulletin, 2000 copies of which were printed in March, 1914, makes very interesting reading. Its illustrations are excellent, and Mr. Hopkins writes in his usual easy style which is in itself an attraction.

Sweet Clover Again

The case of sweet clover has been given another boost, before the public, by Prof. Mosier, of the Illinois State Agricultural Experiment Station, at the Chautauqua of Hamilton, on Aug. 15. Not only he said that sweet clover was a far better legume to enrich soil than any other legume, but he reported that he had planted last fall 55 acres of red clover and 6 acres of sweet clover. Owing to the drouth, the red clover was about all killed out, while the sweet clover had yielded a crop of four and four-tenths tons of hay per acre. He also averred that sweet clover is almost as good hay as alfalfa.

well the list will be made promptly.

Officers of the association for the first year were chosen. President, G. F. Pease; vice president, W. S. Carney; secretary-treasurer, L. T. Rogers.

Massachusetts Field Day.—One of the biggest joint annual field day meetings of the Worcester County Beekeepers' Association and Eastern Massachusetts Society of Beekeepers in the history of the county took place at the home of O. F. Fuller, president of the former organization and prominent queen-breeder in Blackstone, on Aug. 8.

Mr. Ellsworth spoke of the progress that has been made in the apiary inspection work.

Dr. Gates spoke of the plan of the Massachusetts Agricultural College whereby it will be possible to demonstrate the fundamental principles of beekeeping at the large fairs in Massachusetts this fall. Arrangements have been completed to attend the Fitchburg fair, the New England fair at Worcester, the Brockton fair, and the fair at Northampton in October.

At each of these will be an extensive equipment, consisting of a demonstration tent, supplied with a work bench and display tables, and a cage in which demonstrations of handling bees will be made, together with a small model apiary. The display will also include the most recently approved methods used in beekeeping. Demonstrations will be given daily by various authorities. This is probably the first attempt to promote apiculture through the medium of agricultural fairs.

Arthur C. Miller, of Providence, R. I., spoke briefly concerning the development of his method of direct introduction of queens through the use of smoke.

A. W. Yates, of Hartford, bee inspector for Connecticut, and queen-breeder, demonstrated in detail his type of "let-alone" hive. This is a modification and development of the smaller hive of Allen Latham, of Norwich, Conn.

E. M. F. Tittle, of Woonsocket, gave an interesting address concerning beekeeping in early days. This was an historical account of beekeeping from

MISCELLANEOUS NEWS ITEMS

Albino Queens.—Mr. Alfred Alex, of Yorktown, Tex., is desirous of obtaining the names of breeders handling Albino stock. Any one having such stock should correspond with Mr. Alex.

Winter in New Zealand.—The last issue of the New Zealand Farmer contains a half-page picture of the beekeepers in attendance at the National Conference in Wellington recently. Their representation is fine. We were struck by the picture in that nearly all the members wore overcoats, until we recalled that the seasons there are just the reverse of what we have here. The honey producer is at his busiest there when we of the North are taking things quietly and profiting by spare moments to catch up with our reading.

Louisiana Association Formed.—Louisiana is going to be placed in the front rank of honey producing States if the plans of an organization formed in Shreveport are developed as expected by members of the organization, which is to be known as the Louisiana State Beekeepers' Association.

Twenty or more persons engaged in this industry attended the organization

meeting, which was held at the Chamber of Commerce headquarters. Several of them made talks, in which they declared that this section of the country was well adapted to bee culture, as shown by results that have been obtained by those in the business.

In different parts of the State there are beekeepers, and it is thought that the membership can be increased to 100 without much difficulty. Efforts to



DISTANT VIEW OF THE MASSACHUSETTS AGRICULTURAL COLLEGE APICULTURAL BUILDING AND EXPERIMENTAL APIARY.

American Bee Journal



JOHN L. BYARD IN THE EXPERIMENTAL APRIARY.

the Greco-Roman period to the modern times.

There were numerous displays by beekeepers, especially by Ross Bros., of Worcester, who had a well-selected assortment of beekeepers' implements, including hives, smokers, and other tools of the business.

Mr. Earl M. Nichols, of Lyonsville, queen-breeder, also had a display. Mr. Nichols had specimens of queen-bees in their mailing cages.

At the demand of the beekeepers, Dr. Yates and Dr. John I. Baird, a former inspector, but now superintendent of apiaries at the Massachusetts Agricultural College, demonstrated the procedure in treating bees for infectious diseases.

O. F. Fuller also demonstrated his method of queen rearing, which is markedly different from the commercial methods. By this method Mr. Fuller has been able to secure queens when others fail, especially late in the season. In his specially constructed hives he has kept drones as late as January.

Bees Attack Dr. Bonney.—While Dr. Bonney, of Buck Grove, Iowa, was taking down a decoy hive full of bees last evening (June 20), Master Claude Welch came to assist him, when the bees attacked the lad. The Doctor, to save the boy, took his veil off and put it over the boy's head, when the angry insects assaulted the Doctor. The Doctor wears but few clothes in warm weather, and the bees found many vulnerable points. However, 50 or 60 stings do not bother him much, and he went on with his work.—*Ex.*

Concerning this accident Dr. Bonney writes:

I send this only because there was no swelling on my face, neck and arms, and possibly I have discovered something.

I was stung 10 or 50 times; a few more or less do not figure. Twice over one eye, once on the nose, twice on the cheek, and once on the chin. By this time I got my handkerchief over my head, then picked up a dozen or so on the neck and where my chest was exposed, also on the arms.

Getting away from the bees I went

to the yard with the decoy hive, and going into the honey house began to look for something to stop the hurting, for it did hurt like the very devil. Spying a bottle of 40 percent solution of formaldehyde I applied that, only because it was the only thing in sight save some denatured alcohol.

Did the formaldehyde prevent the swelling? Try it?

Beekeepers' Field Day.—The beekeepers of northern Illinois and southern Wisconsin will hold a Field Day at Black Hawk Park, Rockford, Ill., on Wednesday, Sept. 9. C. P. Dadant, editor of the American Bee Journal, A. L. Kildow, State Inspector of Illinois, and if possible N. E. France, State Inspector of Wisconsin, will be present.

A colony of diseased bees will be shown and the disease discussed. Every beekeeper is cordially invited to attend this meeting. A profitable and enjoyable day is anticipated. A large attendance is expected.

A. L. KILDOW,
State Inspector of Apiaries.

The Des Moines Meet.—This convention was the fifth of a series of summer meetings being held throughout the State by the Iowa Beekeepers' Association. The event took place at the Dustman apiary, July 15, when an attendance of about 125 persons experienced.

The program was featured by practical bee talks by Frank C. Pellett, State Bee Inspector; Prof. Bartholomew, of the Iowa Agricultural College; Judge A. P. Chamberlain and Prof. C. H. Tye, of Des Moines, and by practical beekeepers.

Few beekeepers held out much hope for a good honey year this season, but the poor prospects did not seem to lessen their enthusiasm for keeping on in their work. Last year was exceptionally profitable in most sections, and they said it would make up for this year.

Mr. Tye spoke of the bee as an economic friend of man. Bees, he said, are one of the greatest agencies in transferring pollen from the male to the female flowers. The body of the bee

is covered with fine, hair-like particles, and when the bee enters one flower to get nectar, these hairs collect pollen and leave it on and fertilize other flowers. Prof. Tye said no section could be a good fruit country unless it had plenty of bees, making the bees useful and important not only for honey production, but for successful fruit growing.

An important point brought out by Mr. Tye was that fruit growers should be very careful in their spraying, to do it at a time when the bees are not working in the blossoms. He said the object of using poisons in the spray mixture was to kill insects, and that what would kill the harmful ones would be strong enough to kill the bees. To avoid killing the bees, the speaker recommended spraying before the blossoms appeared, and then delay the second spraying until after the fruit forms. This plan would be just as effective against the pests, and it would protect the bees which are so essential in fruit growing.

Foulbrood, which is putting so many beekeepers out of business, was the subject of the State Bee Inspector, Mr. Pellett. He mentioned three prominent bee diseases, sacbrood, American foulbrood and European foulbrood. The first is a very mild disease, and never causes very serious loss.

The only way to combat American foulbrood successfully is to melt up all the honey and wax, says Mr. Pellett. A light chocolate color in the larvae makes the disease easy to recognize when it first breaks out. In the advanced stages the color becomes darker and resembles roasted coffee. The disease usually begins at about the time of capping. Decaying larvae which have died have the odor of a poor quality of glue.

If European foulbrood is discovered in time, it need not be so serious as the American. Mr. Pellett said the best way to get after this is to kill the old queens and replace them with Italians, as they are more resistant to the disease. The European foulbrood seems to be an entirely different disease, and larvae are attacked at an earlier stage than with the American. There is a small yellow spot on the body near the head of the larvae when the disease first breaks out, and very few of the cells are capped. After death occurs the larvae turn yellow, then brown, and finally almost black.

Marketing of honey was discussed by Mr. H. B. Miller, of Marshalltown. Although Mr. Miller has been in the bee business only a few years, he has built up a profitable market for his product.

The annual convention of the State association will be held at Ames Nov. 17, 18, and 19 in connection with a short course on apiculture. A feature will be a beehive products exhibit in which all beekeepers are invited to compete.—*Wallace's Farmer.*

When the Trouble Started.—Slagg had lived all his life in the city. Never had he seen anything in the vegetable line except factory made grass until he decided to spend the summer working on Cousin Hiram's farm. Not

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knowing much in the way of driving a hoe or a harrow, the new farm hand was put to work whitewashing the out-buildings, while the rest of the staff took to the cornfields. When Cousin Hiram returned to the house at noon, Slagg was sitting on the woodpile looking as if he had been crawling on his face through 10 acres of sand burs.

"Give me my money, boss," said he in a mournful voice. "I'm going back to town."

"What have ye been doin' to yerself?" asked Cousin Hiram, wonderingly sizing up the new hand. "What's happened?"

"I don't know exactly what happened," was the dejected reply of Slagg, "but it started when I tried to whitewash that thing they call a beehive." —
Philadelphia Telegraph.

United States Statistics.—The Year Book of the Department of Agriculture for 1913 shows importations of beeswax of 828,793 pounds at about 30.6 cents per pound. Exports of the same 116,296 pounds. The comb foundation exported evidently does not appear in this amount, for the price given of the beeswax exported is less than 30 cents per pound. Perhaps there is some error in the reckoning.

Honey exported amounts to \$182,252,

while the imports amount to only \$68,717. The latter is inferior honey, for the price is a trifle less than 60 cents per gallon.

ing more and more interesting each year.
H. S. DUBY.

The Field Day at St. Anne.—The picture sent under separate cover is a part of those present at the field meet of the Eastern Illinois Beekeepers' Association, which met at St. Anne, Ill., July 11, and was one of the best ever held in Illinois. Over 75 were present, and it was evident that the crowd would be too large to have all of them at one time in the yard at good advantage, so two groups were formed; the first with I. E. Pyles, who took excessive pains to instruct his hearers.

The second group was under the care of A. L. Kildow, and was mostly ladies. Mr. Kildow was at his best, and astonished some of the ladies the way he handled "those bees," and "did not get a sting." Veils had been provided for the occasion, though the bees were very gentle and no one was stung.

After the demonstration the people went to the shady lawn where the two inspectors gave lectures to a very attentive audience.

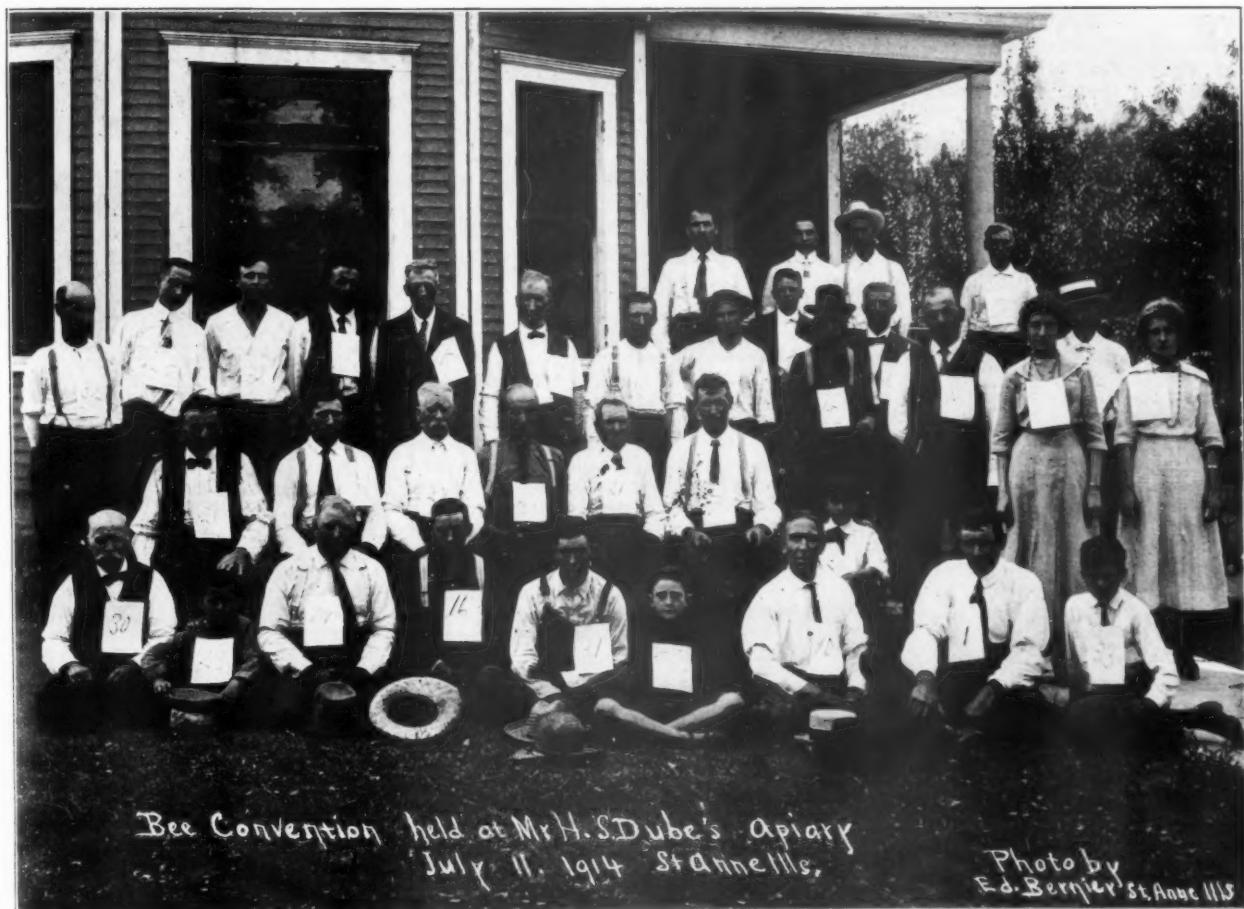
After many thanks to H. S. Duby for his kindness in letting them have the use of his yard and disturbing "his bees," the meeting adjourned.

This was the 4th annual meeting held in St. Anne. These meetings are grow-

The Mt. Pleasant Meeting.—Starting from our home at 5:30 on the morning of July 28, with an automobile, we reached Mt. Pleasant, Iowa, 50 miles away, at 8:10. Coming from the north, with his wife and daughters, Frank Coverdale living 118 miles away, started at 4 a.m., and reached the place of meeting a little before noon. In this day of speed, two farmers may leave their homes on the opposite edges of some of our great States, get together for a talk and go back home the same day, without having to bother with train schedules. What will it be when we succeed in building decent roads throughout the United States? These are needed, for a sudden rain puts an end to all the pleasure of such trips.

The meeting at Mt. Pleasant was only fairly attended when we compare it with previous meetings at other places. But it made up in enthusiasm what it lacked in numbers. The sessions were held in the ancient and dilapidated Court House of Henry county. A fine new Court House with modern conveniences is just completed, and will be in use soon.

We had the pleasure of meeting there one of our oldest practical men, J. A. Thomas, of Mt. Pleasant, whom I had met for the first time at a bee-



CONVENTION GROUP AT THE ST. ANNE, ILL., FIELD MEET, JULY 11, 1914

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keepers' meeting at Burlington, Iowa, May 7, 1878, or 36 years ago.

In the absence of the secretary, Mr. L. W. Elmore was made secretary *pro tem.*



FRANK COVERDALE

The discussions included consideration of the Quinby *vs.* the Langstroth hive, by J. A. Thomas. The Quinby hive had more supporters, at this meeting, than usual, and a strong appeal was made in its favor. Then Mr. Pellett gave some views on the question of marketing and advertising the honey crop, saying that with a little money, judiciously spent, beekeepers could



MRS. COVERDALE

very much increase the demand for honey, making the price much more satisfactory.

The qualities of the different races were thoroughly discussed, especially as regards their possible immunity from disease. The verdict was strongly in favor of the Italian race.

Organization among beekeepers was

recommended in a paper by Mr. Baxter, with the greatest stress on State organizations, for both the purchase of supplies and the sale of the apiculture products.

The *clou* of this meeting was the discussion of the growing of sweet clover, led by the king of sweet clover growers, Frank Coverdale, whose name ought to be "Cloverdale." Nothing new was brought forward, however, outside of the emphasis of the usefulness of sweet clover as a feeding crop, as a soil enricher and as a honey producer. This is being acknowledged on all sides, and sweet clover is coming into its own. Wherever it is grown largely there is very little chance of

honey crop failures.

Leaving the place of meeting again at 5 p.m., we were home in time for supper. We use Ford automobiles. They are the cheapest and best for the money. Light cars are desirable for the farmer. I once owned an Overland. They are considered as good cars. Mine was a cripple, for I never went anywhere with it without having trouble. When I became tired of paying for repairs in every neighboring city garage, I wrote the company to complain. They promised to send a machinist to examine the car, but never did, so we finally traded it off for a little Ford, and we now have three of these in use.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

A Letter from New York

"In your 'Fifty Years Among the Bees' you wrote of a colony which did not swarm (the one in the four hive bodies with openings all the way up and at the top). Didn't the rain going in all those openings hurt them, or the brood and uncapped honey?

"The attached picture shows my one colony, kept for the joy of watching their ways. A year ago I bought four frames of Italian bees with an extra select tested queen which I found and clipped the next week, and they have not been cross in spite of my fussing with the shade boards and 'swatting' the hornets and bumble-bees that bother them. The bumble-bees bother them a great deal.

"This spring I saw a humming bird poke his bill in at the entrance. Evidently he did not reach any honey, for he has not been there again.

"The bottom-board was too tight to pry loose without disturbing them, but they have a full entrance (10-frame hive) with the other entrances front and back, but not at the top, two full bodies for the brood, three extracting supers (one with foundation, and the 10 drawn combs from last year divided between the other two), and at the top a comb-honey super which is partly drawn out. Surely, they have room enough and air enough; yet on a humid day there will be anywhere from 50 to 200 out on the platform. Do they always do that?

"My loose hanging frames hang on spaced metal rabbits, but I have cut down those spacing shoulders and put nails in the frames, '*a la* Miller,' and have spacing nails in my extracting frames the same way, using eight of these to a super; so much easier to handle.

"There has been a great growth of white clover here this year. I never saw so much before. We have had so much cool wet weather lately, but there seems to be a flow right along from something; they even work in the rain.

"This morning they were coming back to the hive at 4:30, and the last few returned at night around 7:45. Do all bees have as long a working day or are mine an exception?

"In August they are very busy on a plant called 'Joe Pye's weed'; then they have golden-rod, asters, and other fall flowers up on South Mountain, just west of us; so that they worked until the middle of October last year. This year they started the latter part of March, and early in April were working hard.

"I am sending you a picture of my winter case, which worked like a charm.



VIEW OF MRS. SAYERS' HIVE, SHADE BOARD AND OBSERVATION SEAT

The back was fastened with hasps, so that it could be taken off after the cover was removed, and scoop out all the sawdust without disturbing the bees. The cover was painted canvas over wood, and had deep cleats inside which fitted down in the body so the wind could not lift it.

"Tar paper covered the wooden case, and the portico was made to shelter

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WINTER VIEW OF MRS. SAYERS' SINGLE COLONY

the entrance, but as you can see by the other picture, we had some very heavy snows this winter, so I laid a board against the portico, thus keeping the entrance dry. They had a great many flights and wintered well. I had a chaff tray over a Hill's device on the brood-chamber, and when I took it off April 24, they had built comb from the tops of frames to the Hill's device. Propolis is abundant in this locality, and they glue everything fast.

"The little stool shown in the picture is where I sit to watch them, and no matter how thick they are flying around, not one ever bothers me. Do you think they recognize the person who is around them so much?

"My shade board works well (the hive faces east and I use a second shade board at the south until the grapevines above them give more shade). We have a bamboo porch screen stretched on the arbor above them to help shade them, and when it rains too hard I put pieces of 'quarter round' over the extra openings on the rainy side.

"Your book has been a great help, and all beginners should have it. I also look for your articles and 'Answers' in my Bee Journals.

"(MRS.) GRACE A. M. SAYERS.
"Nyack, N. Y."

The foregoing letter, with the beautiful pictures accompanying it, has been handed over by Dr. Miller for publication in this, its appropriate department, and the replies here given are in accordance with his views.

Those pictures are interesting subjects for study. One of them shows Mrs. Sayers' "apiary" almost covered with snow, in the center of the picture; another gives a nearer view to show the manner of its winter dress; while the third, exquisite gem that it is, shows the "apiary" in its coolest dress for hot weather. A close look at this third picture shows that the different stories are "stuttered;" that

is, that they are shoved back and forth to admit ventilation. Some of us who have to work at the hives all day long in the sweltering heat can but envy Mrs. Sayers that shady seat on which to watch the bees and listen to their drowsy hum. Nothing drowsy about the bees, to be sure, but did you never notice a drowsy feeling coming over you if you sat for any length of time watching the bees and listening to their steady murmur? But why in the world was not Mrs. Sayers herself sitting on the seat when the picture was taken?

Mrs. Sayers raises the question that has probably troubled many another, as to whether in the "stuttered" pile the rain does not beat in through the openings and hurt the brood or uncapped honey. Well, we have had experience enough in the matter to be

able to tell something about it. For a quarter of a century or more we have had one or more of such piles every year, and we have had much more experience in another way, for throughout most of the harvest on all hives having section supers an opening of a quarter of an inch or more has been allowed between the hive and the super at the back end. During all these years we have never noticed any harm from the rain entering these openings. If you will think about it you will see that the rain must be driven half an inch in a horizontal direction before it can touch the brood or honey. The most that probably happens is that a little clean water runs down at the ends of the frames, and in warm weather that can do no harm.

It will be interesting and instructive if Mrs. Sayers will report how that comb-honey super on top of the three extracting supers turns out. One would hardly expect very much work to be done in it until after the extracting supers are filled. To be sure, that would also be true of an extracting super on top; but the bees would be a good deal slower about working on foundation than on drawn combs. Of course, the sections being partly drawn out makes a difference.

Yes, Mrs. Sayers, on a humid day it is nothing strange to see many more than 50 to 200 bees outside the hive, especially after the day's work is over in the evening. Even with abundant ventilation it is more comfortable outside than in.

The question as to the length of a day's work for bees is not one to be answered in ten words. From 4:30 in the morning until 7:45 at night is certainly a long day's work, and is exceptional. There is a difference in bees as to industry, and your bees may be exceptional in that respect. You will no doubt find, too, that 15½ hours is an exceptional day's work for your bees. There seems some irregularity about the working of the bees that is a bit puzzling. Under what seem to be the same conditions they work at some



THE SINGLE COLONY PACKED F R WINTER

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times longer than at others. Sometimes they work as early and as late as the light will let them. The flow has much to do with it. So has the temperature. They will, of course, be slow about getting to work on a very cool morning. But sometimes, too, they are slow about getting out on a warm morning even in a good flow. It looks just a little as if they said to themselves: "We worked hard all day yesterday; we're tired, and we're entitled to a little extra rest this morning before starting out."

"Do bees recognize the person who is around them so much?" Likely not. Yet when placed where people are constantly near them, or passing by, they are less likely to be on the offensive or

defensive than when seldom seeing any one. Yet such bees act just the same toward an entire stranger as toward their owner. There are some indications, however, that bees seem to distinguish between individuals; although the recognition of their owner as compared with a stranger is a recognition of enmity rather than of friendship. On a day when bees are quite cross, and the owner has been working with them, and then after having been away from the apiary half an hour or so the owner should come with several strangers in the vicinity of the apiary, the bees will single out the owner and attack him, or follow him about in a scolding way, while the strangers may be undisturbed.

thin foliage — the black locust — the source of the light-colored, thick, delicious honey which we enjoy so much when at our mountain home. We continued our climb, our pathway narrowing until, after much physical struggle we placed our feet on the rocky peak. This climb was much like the business climb of life, arduous in the undertaking, pleasant in the success.

Here we spent much time looking over the country. It was grand beyond description. Leaving this point, we followed the Blue Ridge proper as it led from peak to peak. All along we had been enjoying the cool, ripe, delicious huckleberries which grew on low bushes about our feet. In many places the mountain's side under the forest appeared blue with the ripe berries. This is a great pollen plant, and it furnishes considerable nectar. The bees build upon it and on the abundance of maple that we see, in early spring, and by the time the next honey plants bloom they are ready to begin storing, swarming, etc.

A little farther we came to a gap on the ridge, where we could see the sun, and it was the most beautiful sunset my eyes ever looked upon. In the opposite direction there rolled up hundreds of great mountains, known as the Scaly Mountains, and it seemed as if the sky rested on the peaks of the highest ones. The surface of these mountains consists of rock or granite, but they are dotted here and there with clumps of trees. The sun was kissing them good-night.

Not far distant, on one of those great mountains, a tower was erected and the ridge we were following led to it. We spent the night in these cliffs, and next morning saw as beautiful a sunrise as the sunset was on the previous evening.

We found several bee-trees along the way. We passed a number of places where water was running over flat-top rocks, and there saw thousands

BEE-KEEPING IN DIXIE-

Conducted by J. J. WILDER, Cordele, Ga.

A Beekeeper's Mountain Stroll

I left my cottage for a three days' tramp through the mountain on a bright sunny morning in June, in company with a party who knew the country. We took with us a very light camping outfit, such as we could carry on our backs.

We traveled only a short distance before we came to the slope. We started the ascent by the side of a beautiful stream that rushed and splashed as it passed over rocks and precipices.

The large amount of sourwood which was ready to bloom attracted my attention. I remarked that if there were any bees in this part of the country, they would soon be storing honey. When the noise of the water permitted, we noticed a faint hum above us, and saw that there were bees in large numbers working on slim-bodied trees which grew mostly on the water's edge. They were basswood. I looked for nectar. I saw tiny drops in each blossom. These trees were loaded with drooping blossoms hanging in clusters. I understood why the beekeepers of the North could make such great crops of honey from this source. As I looked at the high straight trunks I remarked that much had been said in our bee-papers about the supply of this timber fast diminishing, and that it would soon affect the supply of sections. It's all "bosh," for the inexhaustible supply here would make such a thing impossible.

The climb was toilsome, and the deep shadows made it rather dark, but every now and then we could see, through a small opening above us, the blue sky and sunshine. I said: "Is this not like the road to success?" We finally came to where the stream forked, coming from two different directions. We hesitated as to which to follow, but after considerable effort we found the direction to the summit. Then we came to where our stream was only a spring, gushing out of the side of the

mountain, and just above this were great cliffs to be climbed. I said: "We have reached one of the critical points of our trip, and we had better eat dinner, rest and refresh ourselves, here where we have plenty of pure cool water, for the climb is steep and jaggy." Should we not do this often, while traveling life's way?

After much toil we lifted ourselves up to a part of the cliff where we could look out and see far over the country and down the rugged way we had traveled over. It was grand, and I said: "Is this not in some respects like a successful career?"

But we should not lose sight of the possibilities of beekeeping, which was the chief object of this climb. We noticed rough bark, crooked trees, with



THE McCAIN YARD AT FRUITLAND GA.

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MR. WILDER'S FARGO APIARY IN FARGO, GA.

of bees sucking water and going in every direction to the great forest below, which is not inhabited. All around us was the roar of bees, for the horse-mint grows there in all its glory. The forest must be full of bees, and this is a great bee and honey country. Beekeepers suffering from diseased or weak lungs could come up to this high country and be restored to health and at the same time enjoy prosperity by engaging in beekeeping.

When we reached the rocky peak which was the goal of our climb, we raised our hands to heaven, said our "little prayer," rested, ate our dinner, then went upon the tower and with our field glasses saw a mountain sight which only those can comprehend who have had a similar opportunity. Some mountains looked like stacks of rocks, others were in every imaginable shape. We saw, at the foot of our mountain, a little village, on the table land, which we reached before night, and found to be Highlands, North Carolina, where is located a great tuberculosis sanatorium where thousands of people have been and are being cured of this most dreaded disease. We found in a store there some honey in 2-pound sections, the first I had ever seen put up in this way. It was fancy. I paid 34 cents for a section of it. It was as fine in flavor as it ever was my pleasure to eat.

After spending the night there we returned home by private conveyance, as there is no railroad near and it is reached only by a steep, winding mountain road.

Our Yard at Fargo, Ga.

This is the picture of the home yard of our Fargo apiaries. It consists of 90 colonies. This was taken when about half the honey had been removed. This yard and the McCain yard gave us over 100 pounds average per colony of extracted honey.

Under the trees in the background

flows the famous old Suwanee river near its head waters. The yard is divided into two parts. This was done by moving them each way this spring to keep them out of the high back waters of the river. While our Texas beekeeping friends were losing their bees from floods, it seemed that the same fate awaited us, and it was only after much effort on the part of the

man in charge that they were saved.

Mr. Bradley has charge of this branch of our business, and like Mr. McCain he is at home, having been reared down the river a short distance. Both are ambitious. Their greatest desire is the management of a great bee business, and perhaps I will never be able to furnish them all the bees they could handle.

Our McCain Yard at Fruitland, Ga.

The picture of the McCain yard, consisting of 100 colonies, the home yard of our Suwanee river apiaries, was taken while the spring crop of honey was on the hives. It averaged four shallow extracting supers per colony. We believe in using plenty of supers, and we usually get them filled, too, by our method of spreading brood and storing room. These hives are raised one inch from the bottom-boards, also the covers are rested on end cleats, allowing nearly one inch at the top. We talk and write "ventilation" and "practice what we preach." Some one might say that these "open" hives would be a good prey for robbers, but they don't attack such hives much, especially if a little precaution is used to keep down robbing.

We interested Mr. McCain in bee-culture two or three years ago. Up to this time he was a trapper and hunter in the great Okefenokee swamp, near which he now lives. He is a bee enthusiast, and says that he never expects to go back to his old trade or do anything but keep bees. He follows closely my instructions and reaps results.

CALIFORNIA BEE-KEEPING

Conducted by J. E. PLEASANTS, Orange, Calif.

Closing of the Honey Season—Light Crop But Quality Good—How is Foul-Brood Carried?

The honey season, which is just closing, records the dullest market the trade has known for years. Very little honey has been sold so far. Producers are holding for better prices. This is probably the best course, with a light crop of excellent quality and sugar on the rise. Extracting from wild harvest is over. Beans are now in bloom, and are reported yielding well.

This ought to be an excellent season for fall increase, which is frequently done in this climate. There is considerable bloom yet from which the bees may gather stores, so there ought to be little trouble from robbing. White sage has held out even yet, and there is some sumac and wild buckwheat, while all the stubble fields abound in drouth weed. Wax weed is still in and blue curls in restricted areas. It is well to build up what we can this fall, as there was comparatively little spring increase. The number of bees was also reduced last year from differ-

ent causes. There was little natural swarming in the spring, and most beekeepers were after honey rather than artificial increase.

Just as soon as possible, we should begin fall increase. Have ready young laying queens and start nuclei, either by division-boards or small nucleus hives. In these new hives should be placed several frames of hatching brood. If starting right now, queen-cells could also be used, as there will probably be drones for two or three weeks yet. I have practiced this method for several years, and it usually works well here. A 5 or 6 frame nucleus is preferable. These should make strong colonies for next spring.

A good many here practice the method of taking off the supers and wintering the colony in one story. If this is done it should be later in the season when all the honey can be put in one story. The extra combs, of course, must be put away in moth-proof quarters.

The health of the bees in southern California, generally speaking, is good, though European foulbrood has crept

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in to a small extent. I believe we shall be able to handle it. But there is a point on which I wish to ask assistance from all who can make accurate study of conditions. How is the disease carried? I would like to ask our Government experts to determine this for us if possible, as we are still very much in the dark on this point.

If this could be positively known it would greatly assist us in arresting the spread of the disease, and until we do know we are in the dark. I have found a few cases this year which utterly baffle any attempt to account for the disease being carried from any other apiary. We quarantined and watched our borders and did everything in our power to keep it out of our county from the first alarm which reached us

that the disease was in the State. Still it came. We have very little, and, as I said, I think we can handle it by the requeening method. But what we need to know is how to practically prevent its spread.

Four years ago when we heard of the disease being present in the San Joaquin valley, in the central part of the State, I went there to study it. I found that several beekeepers who had suffered losses, believed the germs of the disease were carried in the air. They said it spread in the direction of prevailing winds. I wonder if this phase of the problem has been noticed in other places. I have not had sufficient experience to give an opinion in this regard, but am seeking light on the subject, as what we need to know is how the infection is carried.

the direct method of introduction. As both of these men have introduced queens by the hundreds, I did not feel as mortified as if I had been alone, for "misery loves company."

It shows that conditions are bound to arise that make any plan of introduction fallible. This verdict might be modified if we except some elaborate methods used for the introduction of very valuable queens, but, as a general rule, some three or four of the recognized common methods of introduction are so sure that one willingly takes the chance of losing a queen now and then instead of going to so much work to be positive about results every time.

Caring for Super Combs

Last month I spoke of caring for the large number of super combs not in use because of the failure of the honey crop. Very little trouble occurred with the moths in combs in the honey houses until the last few days, when some are beginning to be in evidence. Some time in May a pile of supers was placed out in one yard to have the honey cleaned up—the combs had not been licked up after extracting last fall. These supers have been out all summer with only a hive cover loosely placed on top of each tier. Today (Aug. 13) no signs of the moths are present. Spiders have webs more or less all through the combs and not a moth gets a chance to deposit eggs. Last week I was up at the Lovering yard, and there we have over 100 full-depth supers piled out in the yard in like condition and not a moth showing its work. I will take the hint, and if another season like the present comes along, outdoors will go all the combs at once.

CANADIAN BEEDOM~

Conducted by J. L. BYER, Mt. Joy, Ontario.

Ontario Crop Prospect

In the July issue of the American Bee Journal, I stated that from appearances at that date, Ontario would have one of the lightest crops of white honey recorded for some years. A meeting of the Crop Report Committee of the Ontario Beekeepers' Association, held recently in Toronto, decided that, from the reports submitted, an average of about 15 pounds per colony would not be exceeded. Personally, judging by letters from various parts of the province, and knowing how things are locally, I am inclined to think these figures high enough, and if strictly No. 1 white honey only was taken into account, there would not be as much as that.

In several counties adjacent to Toronto, a light yield was secured from maple, willow, etc., as well as a very small amount from clover and basswood, but so far, I have not seen a single pound of the honey that would pass as No. 1. At a time of the year when we do not think of getting any white honey here in York county, the bees at the north yard began unexpectedly to store nicely, and we have a half crop at that one yard. Not very much for a good year, but something to be appreciated in a year of failure, when all hopes of getting white honey had been abandoned for the season.

Wintering Prospects

In our own locality the season has been very dry up to date (Aug. 13). Quite a large acreage of buckwheat near our York county yards, but little honey stored as yet, owing to drought. To be of benefit rain must come soon. Present indications are that it will be hard to get sugar for winter feeding, owing to the difficulties caused by the terrible war now raging, and naturally we are hoping for enough buckwheat to winter with, in case sugar is not ob-

tainable except at a prohibitive price. However, this is a minor consideration at a time like this, and our hearts bleed as we think of the awful miseries caused by the war, to the millions and millions who are suffering and losing all that is dear to them, and through no fault of their own.

Introducing Queens

A poor season is a good time to test out methods of introducing queens. Since the direct method of introducing by smoking with any ordinary fuel has been recommended (for years I used tobacco smoke for this purpose), I have been successful in almost all attempts at introduction.

About three weeks ago a friend sent me two queens rather unexpectedly at a time when no nectar was coming in. Just a week previous another queen had come under the same condition from another friend, and as I had taken the queen away from a strong colony early in the morning and introduced the new arrival successfully in the evening, I felt like trying the same game with the other two. Accordingly early in the morning, to avoid any robbers nosing around, I hunted out the queens of two hybrids, one of them more than ordinarily vindictive, as results will show.

Queens were run in these colonies late in the evening, and the cross colony was given an extra hard smoking so as to be sure of results. Next morning I found the results sure all right, as on the corner placed in front of the hive was my nice yellow queen. About five days later I went through this colony and cut out cells started, and that evening ran in another queen after giving another smoking. The next morning this queen was outside, too. Since then I have had letters from two well known queen-breeders, one in Ontario and another in New York State, both reporting heavy losses by

Feeding for Winter

No doubt many will be thinking about the feeding question by the time this issue is in print; in fact, some have written me already asking as to quantity to feed, time to do this work, etc. As to quantity to feed, be sure you have enough, and in a year like this we are more apt to err by giving too little than overdoing the matter, especially if sugar is dear and the pocket-book light, as is the case with many of us this year; at least I can speak positively as far as I am concerned. As to time, much will depend upon your location. Formerly we had no buckwheat, and we aimed to have all feeding done in September. Of late years quite a lot of buckwheat is sown, much of it quite late. While this late buckwheat yields little honey, enough comes in to keep the bees breeding, and there is a lot of brood in the hives much later than formerly.

As we like the bulk of this brood to be hatched before doing any feeding, I would like all to be fed about Oct. 10 or 15. As we usually have many colonies to look after, we have to start about Sept. 26 in order to get through by the middle of October. At that date we feed a thick syrup made of 100 pounds of sugar to 50 of water. A sack of sugar is dumped into a tank used for storing honey, and on top of the sugar

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a little over 50 pounds of boiling water is poured. A vigorous stirring with a large stick will in a few minutes give as good a feed as can be made. Best results are obtained by feeding the syrup quite warm, especially if the weather is chilly at the time.

Systematic Requeening

How I wish my bees were as sensible as Dr. Miller's, page 279. He says: "The bees usually requeen in good time, if the matter is left to them." And for that reason he does not do away with 2 year-old queens, if they appear to be making good. Sorry to say that I do

not practice systematic requeening, but in my case quite a large percentage of the colonies fail to replace 2-year-olds before they fail, and often act this way just at the close of fruit bloom, and this means a setback for the clover harvest.

[The answer criticized by Mr. Byer is not by Dr. Miller, but by the junior editor, as may be seen by the initials, C. P. D. at the foot of the reply. The question had been asked of me. Dr. Miller might have replied in a way more suited to Mr. Byer's views.—C. P. D.]

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Supering

With the slow flow we have had this year, it has not been advisable at any time to raise the first super until it was three-fourths finished. And by that time the second super would be half full, in many cases. Then, changing places and placing an empty super on top answered the requirements of this season. I had four supers on only one colony, quite a number had three on, but the great proportion had but one or two.

The bee-escape method is the nicest in removing comb honey, but smoking the bees out, then removing the super and jarring the remainder out on the ground works fast and well if the bees are not robbing. Fifteen cases an hour can be easily taken off by the smoke and jarring method, by one man.

New Net Weight Law on Section Honey

With the enforcement of the new net weight law there will doubtless be some changes in the methods of comb-honey production. If stamping the net weight on a section has a tendency to limit sales, the bee-men will have to put out a section holding 16 ounces net weight in order to hold the trade. It is doubtful whether much more can be secured for a 16-ounce section than has been had for a 12½ ounce one. The public will no doubt get used to the change, and after those who have had the idea that whenever they bought a section of honey they were buying a pound get over their disillusionment the trade will go along as formerly.

For those who have been weighing their sections in the past, the law works little hardship. The time taken to stamp the sections is not long. By packing uniform weight sections in a case the case may be filled full, if a single tier case, and then the tops of the sections may be stamped quickly and the cover put on. Where the double tier case is used the lower tier is put in and the tops of the sections are then stamped, then the ends of the case are stamped, and the top tier is

put in and these sections are then stamped and the cover put on.

By the use of the minimum weight stamps it is not necessary to weigh every section, but all doubtful ones must be weighed. Until one becomes sure of himself every section should be weighed, for no section will be allowed below the minimum stated. I

think there will likely be trouble here and also the rubber stamped sections may be imperfectly stamped or the leaking honey will absorb dust and obliterate the marks.

There is one thing good about the stamping, and that is, the tops of the sections have to be well scraped or the stamp will not show.

Packing Comb Honey

We have had a busy time in the honey house these days. Two to five girls have been busy cleaning the sections of comb honey, and it keeps one person busy mailing shipping-cases and another grading, stamping and packing the honey. One hundred cases of honey is the most that has been put up in one day. At this rate the work will not last many days, as half of the bees are run for extracted honey, and the flow has not been so bountiful as last year. Two of my apiaries will not average one case to the colony, while two others will do better than that, probably two cases to the colony, though the flow is not over yet.

In scraping the sections we find that old silver plated knives, cut off with the blade pointed and about half length, make excellent tools. Paring knives were used last year, but are not stiff enough. The table knives are much better. We pay the girls 5 cents a case for scraping the sections, and they earn from \$1.00 to \$2.00 a day.

NOTES FROM ABROAD

BY C. P. DADANT.

We were barely installed in a room in the Hotel St. Gotthard, in Zurich, when we received the visit of Mr. Spuhler, the translator into German of Bertrand's "Conduite du Rucher." He wanted to arrange to entertain us the following day, which was Sunday, and take us, in the afternoon, with a few other beekeepers to an apiary in the mountain above Zurich. We called upon him at his home in the forenoon, met his wife and daughter, saw his apiary, and took note of his honey extractor, of which we give a cut. This honey extractor is as much better than ours as their public roads are better than ours.

When we see the way in which they build everything, houses, factories, bridges, hives, bee houses and extractors, we think that if they came to see us they would regard many things that we have as shabby. But they don't consider cost. This extractor costs \$28, in a country where labor is cheap. It is reversible, and the baskets open to put the comb in. The tin of the can is more like boiler iron, for strength than like American tin.

In the afternoon, they and several of their friends called at the hotel in two carriages and we went together through the city and up the hill to another such

view as can be found only in Switzerland. There we met the beekeeper whom I have mentioned in the October number of 1913, page 343, who gave me the best possible arguments in favor of house apiaries. His bee-house is a model, built on a cement floor and foundation and roofed with tile, the hives ranged like so many closets, on one side, the extracting room and storing room on the other. No need of wheelbarrow or truck to carry the supers. One could not have things handier unless he could manage to have the bees bring the honey to the extractor. For feeding also, in cool or rainy weather, or at night, nothing can be more convenient. Each hive has an opening in the rear where the food may be poured into a separate partition of the feeder, where the bees cannot go.

But with all these conveniences, I would not exchange our methods for theirs. How could we produce our large crops in such cramped quarters? We often have two supers on a colony at one time, sometimes three and even four or five. Our large crops would be out of the question or we would need enormous buildings. Would it be possible to combine the use of a bee-house with the expandible hives

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There Was a Jolly Crowd at the Dances, I

and supers which enable us to secure our large crops?

We did not ask how much honey they extract in a day. Neither did we dare tell them how much we extract, for fear of disbelief. Labor being cheap, time is no object, in Switzerland, and we often saw a whole family of seven or eight, men, women and children, exceedingly busy in an acre of wheat. What would they say if they saw our 40-acre fields cut by one man, with two or four horses, and a binder, in three or four days? But the Swiss raise fine grain, and whatever they do is done well.

While in Zurich we were more than once sorry of not being able to speak German. But we found enough people who spoke French or English fluently to get along fairly well.

We had a most enjoyable visit, for all these people treated us with wonderful hospitality, as well in fact as if they had known us for years. With the French Swiss, we rather expected a hearty welcome, for we had already a mutual acquaintance, and were not disappointed. But the hearty recep-

tion of the German Swiss was especially appreciated, since it was unexpected.

On our return from the mountain we met the renowned Dr. Kramer, the president of the German-Swiss Bee Association, who was thought by his friends to be still on his summer vacation in the Engadine. He made us promise to visit him the next morning. We did.

Dr. Kramer is a strong personality. He has been called by critics "the Czar of Swiss bee-culture." He is the positive head of a strong association. At the last report received by us, it numbered 9543 members, divided into 116 sections. This is aside of the Société Romande of western Switzerland. They have 36 experiment stations. But these contained only 54 colonies in all, too small a number for practical comparative experiments.

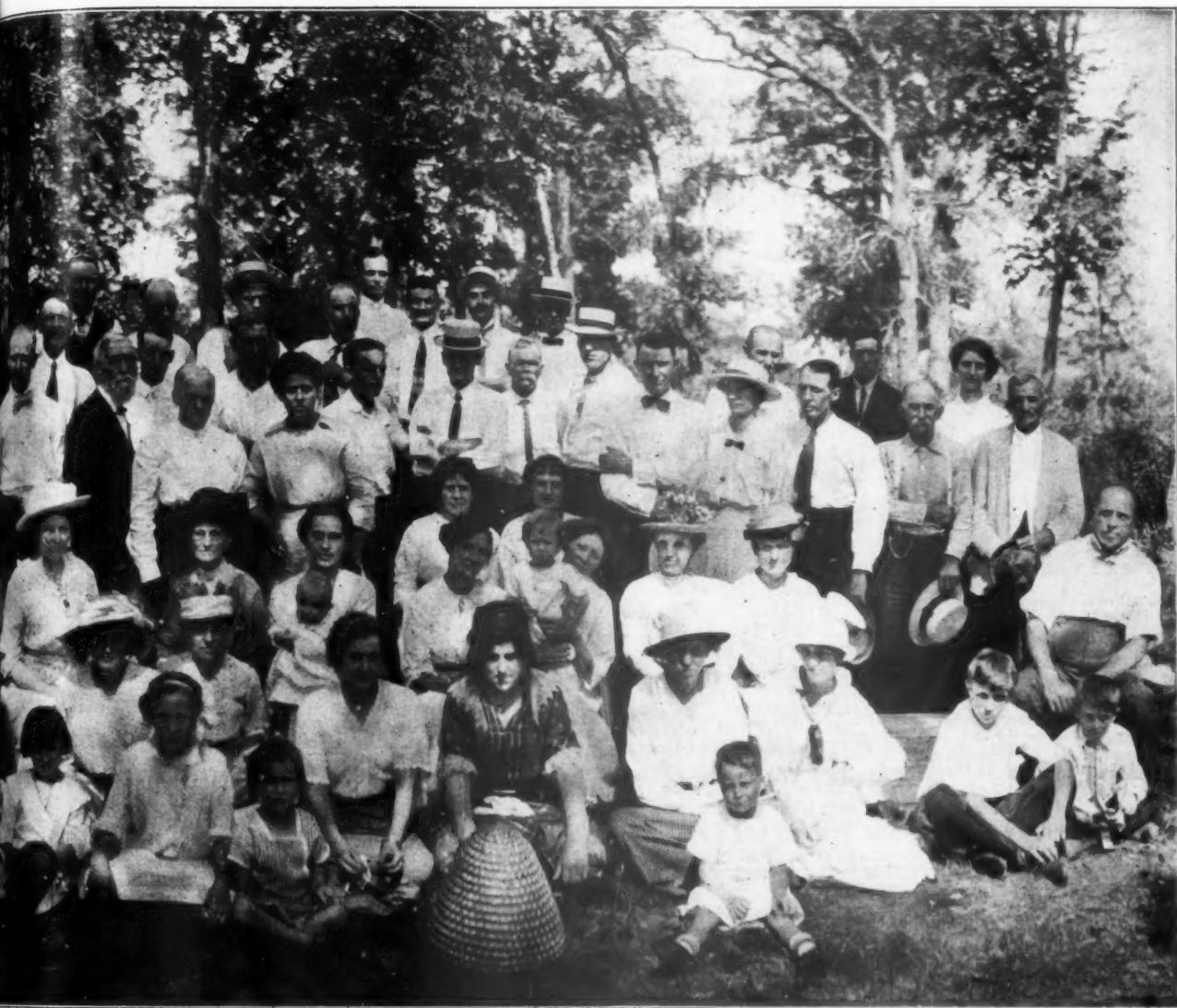
They also have a mutual insurance against foulbrood in which 121,702 colonies are insured. They have paid in losses about \$4000, with about \$360 left in their treasury, and the sum paid per colony for insurance annually is

only one cent. Their association had on Dec. 31, 1912, a capital of 41,480 francs, or practically \$8000. They had in addition a relief fund of 7055 francs (\$1350) to indemnify the members who suffer from disaster, floods, avalanches, etc., common in Switzerland. This is an admirable organization of which the Swiss may well be proud, and which we ought to imitate.

As might be expected, Dr. Kramer had much to say to me concerning the improvement of races, for he knew that my aim was to investigate this matter. He is entirely opposed to the introduction of the Italian bee, and says they are unfit for the climate of Switzerland. He is satisfied that their mating stations, in narrow isolated valleys are preparing great progress. I suggested that a propaganda for the removal of drone-comb from inferior or undesirable colonies and the replacing of it with worker-comb would help greatly in preventing undesirable matings. But he assured me that the mass of beekeepers were not progressive enough for that work.

Dr. Kramer believes in in-and-in

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the Dunes, Iowa, Field Meet on July 15

breeding to emphasize the qualities of a race, and it is in this direction that the efforts of the mating stations are bent. To my argument that nature seeks cross-fertilization, he replied by giving the instance of wheat and other cereals as self-fertilizers.

However, not all the beekeepers agree with this. Neither is their breeding of the pure black race of bees uniform. I saw more or less mixture of Italians wherever I went. Mating stations as now existing are objected to by many on account of insufficient isolation which prevents the positive control of matings. Mr. Spuhler, who is a very experienced beekeeper, assured me that he had known of matings at a distance of 6 kilometers. As this is only $3\frac{3}{4}$ miles, there is nothing astonishing about it. [See the article from Mr. Spuhler on page 311.—Ed.]

You will now have to follow us in a tourist excursion. On the evening of Aug. 25, we went to Neuhausen, near Schaffhouse, at the famous falls of the Rhine. We have seen Niagara Falls, the falls of the Yellowstone and the Yosemite, which are all greater in

some way than the falls of the Rhine. Yet the latter have a peculiar beauty all their own and we lingered there, came back to them after leaving them and lingered again. We could have remained there a week and enjoyed their grandeur. The on'y thing that mars them is what we find at Niagara Falls, factories with industrial use of a part of the water. Nothing of this sort yet exists either at the Yellowstone or at the Yosemite. These will probably remain wild in spite of the ambition of electrical engineers. The greatness of the canon of the Yellowstone places this fall at the head of all.

The big castle at the Rhine Falls has been put to mercenary uses. It is controlled by venders of trinkets and souvenirs of all descriptions. That sort of thing is objectionable, and the government ought to take the matter in hand. The beauties of nature should belong to the public without hindrances.

Back towards the south we came and landed at Lucerne. Stopped at the Alpina hotel, where the usual breakfast of coffee, milk, butter and honey was

served to us. I have not yet said anything about the quality of Swiss honey. It was a bad year in which to judge it. The only places where we saw really white honey were at the hotels, and we were told that in many cases it was a manufactured article. But it was good, and I would have accepted it as pure in most instances. The honey crop of 1913 was dark and strong. But the price is high, something like 16 to 25 cents per pound for extracted honey.

We took a long carriage ride around Lucerne. Saw several monoplanes flying about, for they have a large aviation field, and you can get a half hour ride for \$20, we were told. Much as we would like to fly, it did not tempt us. We thought the country most beautiful. Small house apiaries caught our eye frequently. Everything is neat and everything was full of bloom. Economy shows everywhere. They save all the chips, all the tree roots for fuel, and one cannot see dead trees rotting in the woods as in America. They make bedding for their stock, and manure out of all the weeds and the low-land grasses. After leaving Switzerland we

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both agreed that we had not seen a single beggar there. The Swiss chalets



DR. U. KRAMER

are the most tasteful looking houses in the world. Their factories look like large homes, and I would not assure that I did not see lace curtains in some of their windows.

Another pleasant thing is the furniture, even in low-priced hotels. There is no "ginger-bread" about it, but it is of European walnut, and the panels

nearly always correspond with each other. That comes from the method at the lumber mill of piling the boards in exactly the same order as the wood was in the tree before it was sawed. You can notice it at every saw-mill. So you may readily buy two boards that match exactly, because they have grown side by side and the veins are the same, and they have been kept together. That would be too much trouble, in America, and two boards that have been parted by the saw may never get near each other again, unless some fastidious person insists on regularity and good taste and has the money to pay the extra cost.

The floors are laid in lozanges, of two or three kinds of wood, even in ordinary country homes. They use stoves of earthenware, enameled in blue or green, which look like big closets, with brass doors. They are very slow to heat, but preserve their heat a long time, when once warm.

We went up the Rigi, as all tourists do. The weather looked dubious in the morning, but when we got half way up, the clouds disappeared and we had a magnificent view of the snow peaks, the Lakes of Lucerne, of the Four-Cantons and of Zug. Had dinner up there and good sunshine. Back by Arth-Goldau, we had an hour to visit that town which was destroyed by the landslide of the Rossberg in 1806, which buried four villages and killed 457 persons. The town is rebuilt on the scattered rocks, some of which are 50 feet or more in height. Human beings are like the ants and the bees, who repair their nest as soon as it has been



Zürcher imkeri
GATHERING A SWARM IN ZURICH

torn down. The danger which lurks above their heads is unheeded till another catastrophe comes.

I forgot that I am writing for a bee-journal. But, honor bright, we did not see any bees or have any bee talks for at least four days.



A model house apiary in the mountains above Zurich, visited by Mr. and Mrs. Dadant. Mr. Spühler, our correspondent, is the bearded gentleman in the center

American Bee Journal

CONTRIBUTED ARTICLES~

Large Hive Considerations

BY D. BARONE.

IT is incontestable that the tendency is more and more toward large hives. And we cannot but remain surprised, not to say pleased, at the results of the last accurate investigations of J. E. Hand, the well-known author of the method of the "Divisible Brood-Chamber Hive" (American Bee Journal, 1914, page 58): "It is evident that a hive of 17-frame capacity is not too large for best results when viewed from the standpoint of economy and utility."

Is not the frank and sincere confession of H. H. Root, in Gleanings in Bee Culture of 1913, page 883, symptomatic? "By the way, when I went to Canada I had a feeling that the 12-frame hive was about two frames too large; but my feelings in this respect grew weaker while I was there, and have been much less perceptible ever since." How many beekeepers are there who, with seriousness of purpose and with a mind free from prejudice, have tested a larger hive in connection with the 8 or 10 frame?

What about Dr. Miller's censure of the Jumbo hive after his timid trial with only two hives of this type and for only a single season? I am sure that if Dr. Miller had persevered in his experiment, since he now advises the 10-frame hive, while before he recommended the 8-frame, so also he would counsel the use of the larger hive, because sooner or later the many advantages of the latter over the former would be apparent to him, a keen and careful observer. The importance of principles, of judgments, as well as of inventions of great scientists, men of letters and artists is always relative to the circumstances of time and place.

Langstroth gave us the mobility and the oblong shape of the frame. Upon both these principles, true beyond doubt, depends the modern rational culture of the bee. But the dimensions and the number of frames, allowing the utmost enlargement of the colony, and, consequently, larger returns in honey, must be the outcome of the debates among the learned and experienced beekeepers of the world.

In my opinion, the reasons that people here oppose the larger hives are of various kinds. I think, more than for any other reason, because it was the fashion for 8-frame hives as it is now for the 10-frame. On the other hand, many extensive beekeepers, even though convinced of the advantages of the larger hives, do not use them because of the expense of renewing the whole of their outfit. Of what value is it that the beekeeper wastes time, intelligence and energy to rear queens of the best stock when he does not give those queens room in accordance with their prolificness? How are we able to know the best queens if we do not

give them this opportunity? Queens that can lay as many as 4000 and more eggs a day are much less rare than some believe.

In Italy, where the voice of Chas. Dadant was not "vox clamoris in deserto," in our Dadant-Blatt hives, with 12 jumbo frames, those usually adopted with general satisfaction, we have in May, per colony, not less than 10 frames full of brood, sometimes 11, and not infrequently all the 12 frames. Can we get so much brood in the 8 or 10 frame Langstroth? No. And is it not true that a smaller quantity of brood brings a smaller quantity of honey in the supers? Let us allow under the frames a space of about 2 inches, and we shall have made another condition that checks the swarming impulse. Large hives, without doubt, diminish the probability of swarming, but do not insure non-swarming. The reasons why the family swarms are many, they depend many times upon inopportune management by the keeper.

Many eminent beekeepers advise placing over the 8 or 10 frame brood-chamber another body of like size to which the queen may have free access for continuing the laying of eggs, while at the same time warning others against allowing heat to be wasted, as it is necessary to the development of the brood.

Well said, Mr. Hand (American Bee Journal, 1914, page 58), "The horizontal contraction and expansion of the brood-chamber is the correct principle. It should be of sufficient capacity to develop the fertility of the most prolific queens."

But many will say the larger hives are heavier and make operations slower. I reply that these difficulties are more imaginary than real. The larger hives are sufficient of themselves; their removal is less necessary; they make the outdoor wintering quite possible with the smallest outlay, and by employing two shallow supers only, with frames farther apart than they are spaced in the brood-chamber, if opportunely and skillfully handled, are more than sufficient for the largest yields of extracted honey. The aforesaid second body placed above the 8 or 10 frame brood-chamber, gradually ridding itself of the hatching brood, will become a super. Is it not easier to handle a half depth 12-frame super than a full depth 8 or 10 frame? In regard to the production of comb honey I maintain that the large hive responds equally well. In fact, the colony in a large hive, and with a good queen, when it has reached its greatest development, finds itself in identical conditions of narrowness to the colony in a small hive. However, with this difference, that while the colony in the latter will contain, for instance, 50,000 workers, the colony in the former will contain 75,000 if not 100,000.

Reader, value this paragraph of J. L.

Byer (American Bee Journal, 1913, page 52): "By force of circumstances I have almost all sizes of hives in common use, from the 8-frame Langstroth to the 10-frame and 12 frame jumbo, and every spring, *without exception*, the bees in the 8-frame hives are the last to be ready for the supers."

If the bees are slow to go into the sections, we can make the contraction of the brood-chamber by the division-boards, according to Dadant's advice. But, in order to get best results, I would be pleased to substitute, *if need be*, the empty combs with combs full of brood borrowed from weaker colonies.

In the north of the United States and in Canada wintering is one of the greatest preoccupations of the bee-keepers, and with good reason.

Many specialists seek to avoid the considerable losses during the severe winter; hence, the many types of double-walled hives, the many ways of packing hives with various materials, as well as the different plans of cellars. These make me think of doctors who try to cure the results without reaching up to the causes. Small hives give small colonies, which poorly resist hard winters.

The town where I was born, in Italy, is 2500 feet above sea-level. There it is not rare for snow and cold to confine the bees to the hive two months, and more. When in March or beginning of April I went over the colonies, I found most of them in a very prosperous condition, and with not less than three or four deep frames full of brood.

Locality! you will say.

I answer through Mr. Byer, who lives in Canada (American Bee Journal, 1913, page 52): "The only explanation I can give is that the colonies with the large brood-nests always go into winter quarters with a much larger cluster than the smaller ones. Given a large force of well wintered bees in spring, it is surprising how they manage to overcome all obstacles in the way of cold, and proceed to build their brood up rapidly."

Keep the families very strong, uniting the weakest; grant them a large supply of sealed stores, put on top of the frames, leaving a bee-space, absorbent material; taking care that the entrance be not less deep than one-half inch by the width of the hive; protecting it by a board inclined toward the front of the hive, excluding storms and winds (I prefer the alighting-board of the bottom to have hinged joints), and you will have made in the shortest possible time, and with the slightest expense, an ideal wintering.

R. F. Holtermann, who wrote in the American Bee Journal of 1913, page 94, values the 12-frame hive to such an extent that when he buys bees in the chambers, waiting for an opportunity and puts them into 12-frame brood-10-frame hives, he takes out the combs to sell the former. With the no small expense of about \$1000 he built for his bees a cellar for which at the present time he no longer sees the necessity. I take the liberty to invite Mr. Holtermann, as well as others, to make a courageous and inexpensive trial this coming winter. He should try to winter about 10 colonies in his 12-

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frame hives in the manner above mentioned, and without any added protection. Mr. Holtermann, perhaps, will no longer feel the need in successive winters of his mammoth winter cases. Perhaps his bees will consume a little more honey, but in compensation they will live in a more healthful atmosphere, and they will have brood before the others. This will facilitate ventilation and the escape of moisture and carbonic acid, and prevent dampness in the hives, which is a guarantee of strength and health. The outside combs and the thickness of the bee cluster constitute a most powerful defense against the assaults of the lowest temperatures.

In a recent issue of the New York Evening Journal I read the following golden words: "To keep disease down keep the windows up. Fresh air, which costs nothing, is more important to health than any food. Cold does not kill you, but germs and bad ventilation will."

Do you not think this wise advice suitable even to our bees?

Mr. W. Z. Hutchinson encouraged the keeping of more bees. To the bee-keeper, and especially to the young bee-keeper, I would say: Keep more bees in *large hives*. Only these give, with the least amount of money, time and labor, the greatest profits. Conform to the golden rule of the German bee-keeper Oetll, "Keep always your colonies strong. Clear your mind from all prejudices, study and assist the bees in their real needs, have faith in yourself, and you will undoubtedly be successful."

New York, N. Y.

[The above interesting contribution

was received by us early in the spring. Its author, who is an experienced Italian apiarist, now living in the United States, writes us as follows concerning hives of the Langstroth system, enlarged, championed in Europe by my father, who was the promoter of the large hives, and after whom they have been named:—EDITOR]

"My father, an old beekeeper, first adopted the Berlepsch hive, which, at that time, was considered the best, and I, then a boy, yet remember how tiresome and slow were the operations with those hives. Reading l'Apiculteur of Paris, and l'Apicoltore of Milan, he followed the advice of Chas. Dadant, and experimented on his large hives.

"The results were so satisfactory that for the last 25 years the roomy Dadant hives are used exclusively in our apiaries. The Italian beekeepers keep a sentiment of gratitude to the memory of C. D. His hives, together with a strain of peerless bees, have made their beekeeping an industry of the most successful kind."—D. BARONE.

honey principally, as there is less work and far more money in it in the long run. Working for comb honey would be rather more difficult. But I also do some of that.

I store my bees with a super of combs on top for winter, or, if not, I add the super as soon as it becomes warm, and let the queen deposit some eggs in it until honey flow begins.

When the flow starts, I lift up the super and place another under it full of combs. When that is reasonably filled I again lift the top super, placing another set of combs under it, then examine the top super and see if all the brood has hatched, or nearly so. If it has, I remove one frame from the center, go to a hive that has frames of brood in super, and simply exchange combs, always keeping some brood un-hatched in the *top* super. As long as there is any space below that super in the hive proper, your bees will not swarm. My hives I run as high as my head, 8 to 10 supers, or if short I extract as required, but always leave or have some unfilled frames below the top super that has brood.

That is my method of non-swarming. I have not had a natural swarm in six years. Whereas before that my children and grandchildren have had to watch bees for four months of summer. Now I watch no more, but tell the bees "there's the honey. If any swarming is needed I will attend to that. You go for the honey and keep everlasting at it." They always mind me.

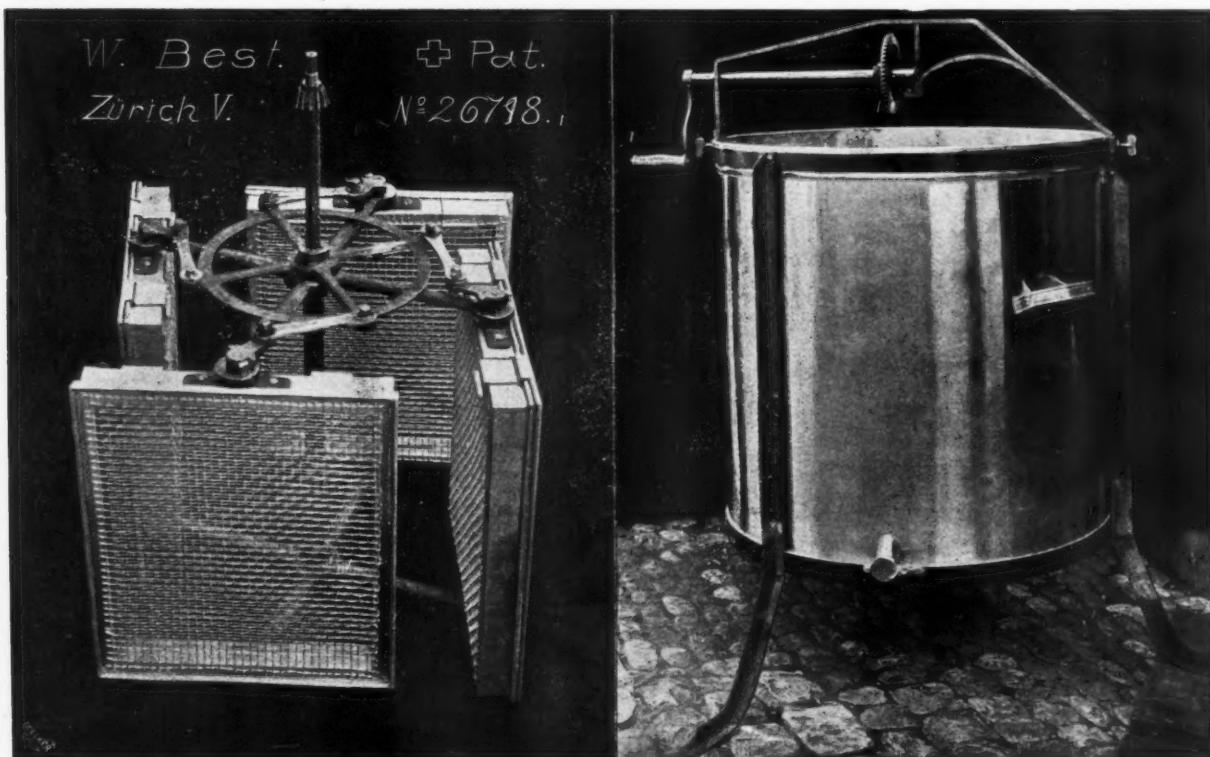
Now for swarming in May, or up to the honey flow, whenever that occurs. We will say you want to double your colonies and no more. As soon as

Controlling Swarming

BY C. F. GREENING.

In the American Bee Journal for July appears an article from "Virginia," relative to the way his Italians swarm on him, and asking what he should do in such a case, etc. Now I will give my plan to save him all his trouble.

First, I am working for extracted



MR. SPUHLER'S EXTRACTOR AND BASKETS

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C. F. GREENING'S APIARY

they are good and strong, and some honey coming in, take an empty hive, fill it with frames of comb, if you have them, or part combs and part guide combs, all but one frame near the middle of the hive. Now go to the best colony you have, and select one good frame of brood in several stages, and put it in the space left in the new hive, putting an empty frame where you removed the brood from.

Now take the hive with the frame of brood to a good strong colony, pick up the colony and carry it away to one side at least 16 feet, and put the hive with frames and comb of brood in the place where the colony stood. Contract the entrance to a couple of inches and let them alone.

This work must be done when a good number of bees are out in the fields; near the middle of the day is best. In a few minutes you have a thousand bees flying around, and they are completely lost. They will run in and out crazy for a while, but soon get to work with a resolution that, "As we have lost our home and mother we have the wherewith to make a new home and brood to rear a new mother." By the end of the second day they will be working like nailers to build up, while the hive you carried away is as still as a graveyard on a Sunday night. Practically all the field workers are at the old stand in the new hive. Now treat them the same as the first part of this article directs, and you have no swarms that year.

By following this plan you have one swarm each of increase, or none, as you elect, not as the bees would do if left alone. Follow the above and save colonies, save watching them, save doubling weak ones, save hives, and what is more important when the honey flow comes in all its beauty, you have every field worker at work. They are not crazy over the swarming fever or losing time strung up waiting for a

good day, or building combs when they should be lugging in honey, while honey lasts.

Thus we have the bees all busy while honey comes, whereas if allowed to swarm in the middle of the honey flow, see what a loss you have caused by the demoralization of one two, three, or four swarms from one, and half of them won't get more than enough to winter on.

My colonies were eight stories high last summer; and while my neighbors got 25 to 50 pounds of honey, I ran up to 150, 200, and one colony 235 pounds. You see it is honey I was after.

Sequel: Build up strong before the honey flow, get the swarming out of the way, and let every able bodied bee tote in honey.

By my method you can build up any kind of swarm you wish or any strain of bees, because you select the brood to rear the queen from. They more readily sober down by taking a frame of brood from the hive you remove and place it in the new hive, because it is a part of the old home and smells the same. They will never desert their brood.

Grand Meadow, Minn.

Bee Culture in German Switzerland

BY H. SPUHLER.

THE culture of bees in German Switzerland differs very much from that in America. Instead of open air apiaries, we have house apiaries in which the hives are placed side by side and tiered in two or three rows. The apiaries are spacious buildings containing from 10 to 100 hives, and they often look very pretty from the outside. They are well aerated and lighted, and allow the bees to escape from the inside rooms without allow-

ing them to come in. They are usually placed near the house of their owner, or in a garden or in an orchard. It is, therefore, easy to watch them, to notice their flight, to discover the beginning of robbing or of swarming, etc. They are sometimes built large enough to allow the establishment of a work shop in which the apiculturist can work, prepare his frames with foundation, extract the honey, and melt the sugar for feeding in fall or spring. It serves as storing room for empty combs, extractor, feeders, etc.

In such a house apiary one can work in all sorts of weather, whether cold, warm or rainy. This is important in a country where the weather is so variable, and where we usually have over 150 rainy days in the year.

The hives are not opened from above, but from the rear through a door. They offer sufficient space for a row of brood combs and two rows of super combs above, the latter measuring each one-half the dimension of the brood-combs. Behind the combs of each row is a movable window sash of proper size held in place by a wooden wedge.

The frames are usually placed cross-wise to the entrance in the Swiss hive, and for that reason examinations require much time and labor; for instance, in the latter part of May, when a colony is supplied with all its combs, 13 in number, if we wish to examine the center one, we must remove the first six and place them in another hive or a box, which is used for this purpose. Those who follow this system do not seem to appreciate the proverb, "Time is money."

This defect was recognized long ago, and there are now a number of hives made which are as movable as the American hives, such as the leaf hive of *Hoernli* (?), adapted to the Dadant hive, and my own hive, corresponding to the "Schweizerstock." In those hives, the frames are placed endwise to the entrance, so that when the rear sash is removed each frame is accessible from the rear. This arrangement permits numerous observations through the windows, such as noting the growth of the colony, its supply of honey, its building of combs, queenlessness by the restlessness resulting from it, success or failure in introduction of queens, etc. The handling of these hives is so simple that it permits to examine two or three of them, while only one of the Swiss hives could be examined.

The house apiary is also indispensable here because of the lack of room, as many people possess only a very small garden. But it is usually sufficient in size to permit of a building containing 10 to 30 hives, and the bee lover can have an agreeable and instructive recreation, with an addition to his resources. That is why we have so large a number of apiculturists owning only a few colonies. The Canton of Zurich, with only 666 square miles of area, possesses 24,000 colonies of bees, owned by 1500 beekeepers, or about 36 colonies to the square mile, and 16 colonies per beekeeper. Very few men possess 100 colonies, and I know but one with 200 to 300 hives, earning his living with bee culture. In his case,

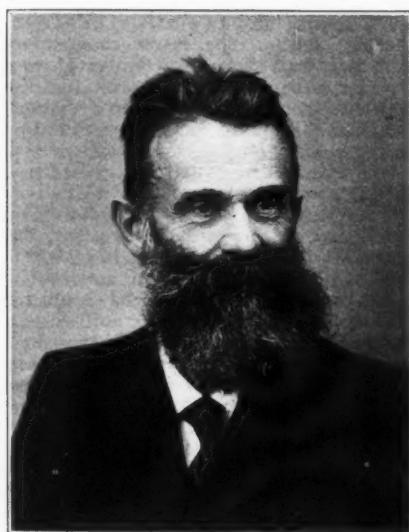


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the purchase and sale of honey is more profitable than his honey production.

As a rule, in German Switzerland the crop conditions are less favorable than in Romande Switzerland, where sainfoin is still largely cultivated. Here it is lacking. Our best localities are in the mountain valleys and in the plains where the pine yields honey abundantly. In the mountain where the bees can harvest from the bottom of the hill to the top, the crop is lengthened. In the plains it lasts but two or three weeks. If the weather is favorable, the apiarist is in good humor, as the supers are then filled. But we do not have this pleasure more than two or three times in ten years.

We have another drawback which keeps increasing, it is the more intensive cultivation of the land for profit. Hazel, willow and alder furnish much



HEINRICH SPUHLER

pollen, but their wood is of low value, and they are constantly removed for something better. Chemical manures are also injurious to honey production. It is for these reasons that, in spite of improved methods, our honey crop has not increased in the past 30 years. The average is from 8 to 10 kilos (18 to 22 pounds), and the average crop of an apiary rarely reaches 30 to 40 kilos. In many cases our bees cannot harvest enough to winter, and we have to feed them, besides leaving to them all the honey gathered. Many beekeepers remove most of the honey and replace it with sugar syrup. It is the low price of sugar which permits this.

The race preferred in German Switzerland is the black Swiss bee, while formerly the Italian and Carniolan races were thought best, and our own was considered as degenerate. The introduction of Italian and Carniolan bees has made a slight change in this race, which now often shows, in its bees, yellow bands or spots and gray hairs. Probably the mixture has helped its regeneration.

For the past 15 years much time and care have been spent in the rearing of queens according to the principles followed in cattle raising, by selection of

males and females. Every year, special courses and conferences are held by the breeders. The best black colonies are selected to supply eggs and larvae for breeding, and minute care is used to secure for them the most favorable conditions during their growth. The matured cells are placed in boxes sufficiently large to accommodate a half pound swarm with two or three combs. Queens of selected stock are reared in an isolated location, a "matting station" which is supplied with a colony containing choice drones.

However these stations do not offer much guarantee of select matings, because they are sometimes only a kilometer distant from other apiaries, and it is a fact that queens often prefer strange drones from a distance of 5 or 6 kilometers (3 to 4 miles).

At the present time our aparian authorities recommend in-breeding as an efficient means of fixing the good qualities of a race, while the Americans object, as we did once, that this inbreeding may cause degenerescence, and may be one of the principal causes of foulbrood. It may, therefore, be a good thing that our queens are able to mate at a great distance so as to prevent a risk as pernicious to bees as to beekeepers. Let us remain true to the principle that, in order to succeed, one should follow the natural laws existing among bees.

Zurich, Switzerland.

Fall Feeding of Sugar Syrup

BY J. A. MCKINNON.

In your foot-note on page 129 of the April number of the American Bee Journal, you give the proper proportions of water and sugar for good bee feed. Every time I see that two to one formula given, I ask myself, does that beekeeper really know what he is talking about, or is it because he has the habit of saying it over so often, or is it because some one else said so and it must be so?

I have fed a few tons of sugar in different proportions, and I consider the two to one way of making the syrup a most wasteful method, excepting when 10 percent of honey is added. Otherwise in the late fall, when nights are cool, one-third to one-half of the feed so made will granulate or candy so hard in the combs that the bees cannot eat it.

I hear some one say, "I have never had that experience." Of such a one I would ask, have you ever looked through your hives and combs two or three days after feeding your colonies for winter with this two to one syrup? If so, you will be in a position to know; if not, you had better wait until you try it. If a colony is given as much as it can take down in 24 hours; that is, 25 to 40 pounds, fully one-half will be wasted, and the fact might never be known to the beekeeper unless he took the trouble to examine the combs, as the bees will start to cut the candied sugar out at once, and if the weather should remain warm, the most of it is carried out at the entrance or to the field.

With me, tartaric acid does not act

much as a preventative. Last fall I had about 3500 pounds of sugar to feed for winter stores, and I thought I could prevent granulation by using a liberal amount of acid. I made some feed two parts sugar, one of water, adding one teaspoonful of the acid for every 20 pounds of feed. This did not help in the least, as in some hives the combs were candied almost solid. First, a thin crust would form on top of the unsealed syrup, and in the course of two or three days it would be as hard as flint. Anything that was sealed over did not appear to be candied. In cases where I fed only 10 pounds at a time the candying was not so bad, and where I fed early in the season, using a thinner feed, there were no candied stores.

I don't know that locality should make any difference in this respect, but what puzzles me is that so many extensive beekeepers endorse this method. I am under the impression that a good many beekeepers are wasting a lot of sugar, not to mention the time that it takes to dissolve it and cart it around the yard. Experience is the best teacher, and in my case it has cost me pretty high, and sometimes when I could least afford it.

Last fall when I noticed that there was a lot of this candied stuff in some hives, I made the best of a poor job, by refeeding or exchanging for sealed combs of honey, or I would take out three or four combs and brush the bees off at the entrance, then take the combs to the water barrel, and souse them full of water. This seemed to help some, although in a few hives it caused brood-rearing to start late in the season.

After this I will not feed any more of this two to one feed; half and half will do very well for mine, and I will feed earlier in the season, so as to have most of the stores sealed over. Ten to 15 pounds of feed might be wasted unknown to the beekeeper, yet the colony might have enough stores left to winter.

I would like to hear from others who have had experience, and who have taken the trouble to look through the hives two or three days after feeding for winter stores. Because one's colonies have always wintered, when fed this, is no proof; even an examination the following spring will not reveal much candied syrup unless the colony has died outright.

St. Eugene, Ont.

Editor Dadant suggested "two parts of sugar to one of water." Mr. McKinnon says "half and half will do very well for mine," and Editor Dadant desires my comment. My first thought is that I would rather not use either sugar or water. Honey is better than either, or both. Only in the utter absence of honey would I feed sugar syrup nowadays, and it would then be with a guilty feeling that I ought to have managed better so as to have had on hand a supply of heavy combs of sealed honey. And then if I did have to feed sugar, I wouldn't make it into syrup either thick or thin. I'd set a Miller feeder on a hive, pour into it dry sugar and then put in water. That's simpler, easier, pleasanter, and safer

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than feeding syrup. Ever so much less danger of starting robbing. And if I were forced to feed sugar, I'd try to do it so early that it would do no hurt to have the syrup very thin.

All of which, however, has little to do with the case in hand. Let's get down to it. It is simply a question as to the proportion of sugar and water if syrup is fed, and I understand Mr. McKinnon to refer to late feeding—an important factor. Mr. McKinnon does not agree with our Editor as to the proportion. Neither do I. Mr. McKinnon thinks he uses only half enough of water. I think he uses 25 percent too much water! My reason: Well, what's the use of giving the bees extra water to be evaporated at a time when the chances for evaporation are poor, and there is nothing to be gained by it? Two parts of sugar to one of water is thinner than honey; two and a half parts sugar to one of water is about the consistency of honey. Please remember that we are talking about feeding late, and feeding all in a lump, with poor chance for the bees to make any change in what is given them. The nearer, then, we can have our feed to the consistency of honey the better.

Let me hasten to say, however, that what the Editor was talking about, page 129, was feeding in spring. I don't know that I would want to make any change in his feed at that time, unless it might be to make it a little wetter. What Mr. McKinnon is talking about is "in the late fall when nights are cool."

The important part is to know the result of feeding thick syrup late, and Mr. McKinnon wants to hear from those "who have had experience, and have taken the trouble to look through the hives two or three days after feeding." I've had the experience, all right, having fed tons of syrup years ago, before I knew any better. I cannot, however, comply with the specification of having looked through the hives two or three days after feeding, as I'm not sure I ever did that, and I'm afraid the number that have is so small that there may be no response, so I will give my testimony for what it is worth.

I do not think I ever did any late feeding of syrup as thin as two to one; it was always two and one-half sugar to one of water. If feeding two to one would result in one-third to one-half of it granulating so the bees could not eat it, then putting in 25 percent more sugar should make the granulating at least 25 percent more, making 5-12 to % of it.

Mr. McKinnon would say it candied and I didn't know it, because I didn't look in two or three days, "as the bees will start to cut the candied sugar out at once." In that case I surely should have seen at some time some of the granules carried out, seeing hundreds of pounds were carried out year after year. I do not recall that I ever observed a single instance, although such quantities at the entrance and scattered around the yard should have been plainly seen.

"An examination the following spring will not reveal much candied syrup"—it will reveal some—"unless the colony has died outright." Which suggests that some colonies die out-

right, leaving the candied stores. In so large an experience, I ought to have found at least a few such cases. Is it thinkable that I should not have noticed it, even if there had been only a single case; that in a careful scrutiny of each comb every spring, I should never have noticed even the small quantity left; that I should never have noticed the imperfect combs where the bees had cut out the candied stores?

Is it not likely that this is the exceptional case, rather than that every one else is wrong? Reminds one of the old woman who said to her crony: "All the world's queer but you and me, Sally, and sometimes I think you're a little queer, Sally."

I always used an even teaspoonful of tartaric acid to 20 pounds of sugar. (If feed is given thin and early, acid is not needed.) Any candy maker will tell you that acid prevents granulation. Yet I know of at least one other case in which the syrup candied in spite of the acid.

Instead of asking why so many extensive beekeepers endorse thick syrup for late feeding, is not the question rather: "Why the rare exceptions?"

C. C. MILLER.

[Mr. McKinnon will pardon us for inserting this article so late. It was sent in April, too late for the May number, and we have thought it would be more timely for fall, as September and October are the months for winter-stores considerations. We have had the curiosity of investigating authors of former years on this subject, and we will give a review in the October number, on sugar for feeding.—EDITOR.]

Expansion and Contraction

BY J. E. HAND.

THE article by Dr. E. F. Phillips, in the July number of the American Bee Journal, contains an unusual amount of solid practical information concerning the prime essentials in economical honey production, information that beginners should preserve for future reference. There is one point, however, that I cannot help wishing he had brought out a little more specifically; this refers to methods of wintering bees out-of-doors in protected hives. In this connection he asks the question, "Have you ever seen a colony wintered in two hive-bodies well supplied with honey, and well packed, come out in the spring?"

While this question might be so construed as to express a doubt as to whether such colonies ever do come out in the spring, we feel disposed to modify and mollify the answer by saying that while we have known such colonies to winter well, experience has taught us that it was in spite of the poor protection provided by the two hive-bodies, rather than on account of it. This applies to the North, where the conservation of the heat that radiates from the winter cluster is imperative.

It is to be regretted that Dr. Phillips did not enlighten us concerning the

correct method of preparing such colonies for winter. If he will pardon the liberty, however, I will offer a few suggestions along this line, for correct wintering methods are the prime essential in successful beekeeping in the North.

A study of bee nature reveals the fact that they are creatures enslaved by habit and guided by instinct; hence, they will usually do the same way every time under like conditions. For example, the habit of expansion and contraction is so highly developed in bees that a colony occupying two hive-bodies in summer, will naturally contract to the capacity of a single hive-body in winter. Such a colony would be poorly protected in a two-story hive regardless of outside packing, unless they can be induced to form the winter cluster in the top story. This practice, however, is evidently forbidden by habit and instinct, both of which wisely compel them to form the winter nest at the bottom of the combs and near the entrance, and follow the base of supplies by a gradual movement upward. The wisdom of this habit is apparent, for if the cluster reaches the top of the hive in zero weather their doom is sealed.

Owing to this trait in bee nature we have found it safer to follow their example and contract the wintering hive to half the capacity of the summer hive, and provide a 3-inch space under the frames to accommodate the winter cluster. With combs solid full of honey and suitable outside protection, bees in this condition can utilize the heat that radiates from the cluster, and will invariably winter well in spite of the cold.

Birmingham, Ohio.

Beekeepers I Have Known— "B. A. Aldrich"

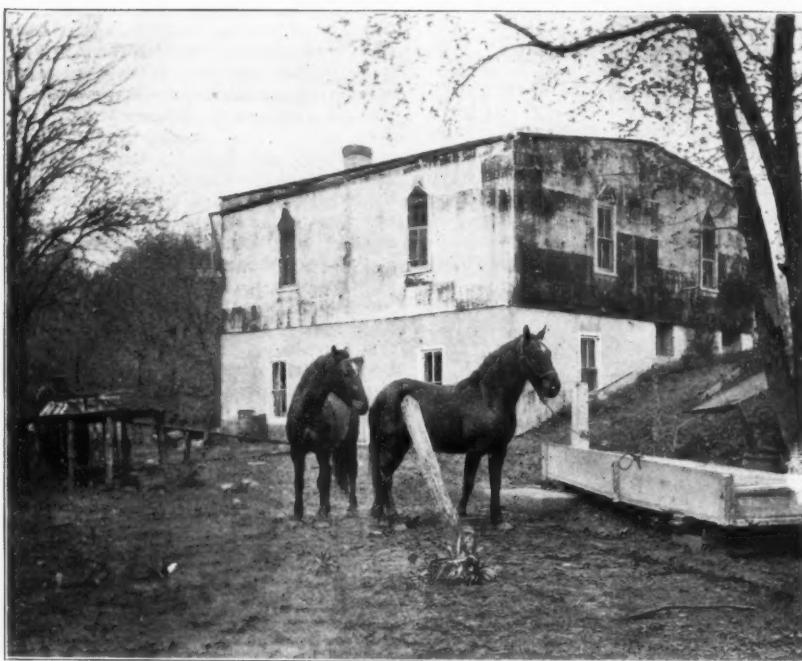
BY FRANK C. PELLETT.

BERT ALDRICH, of Smithland, is one of the big bee men of Iowa. When it comes to total production it is doubtful if any man in the State exceeds his average crop. Here in Iowa none of our bee men number their colonies by the thousand as in a few western localities. However, perhaps there is not in the United States a beekeeper with not to exceed 400 colonies who can beat Aldrich when it comes to counting the profits. He does practically all his own work, and has the finest equipment of any man in Iowa.

As will be seen by the photograph, the honey-house is two stories high. The ground is on a level with the second floor on the north side, and the honey is all brought home for extracting. It is unloaded on the upper floor, and an 8-frame power-driven extractor takes care of it very rapidly. Instead of a honey pump, he has a drain pipe running directly from the extractor to a tank on the lower floor. This tank holds about 3000 pounds, and is sufficient to contain one day's extracting.

Some men with a system of out-yards such as Aldrich runs, carry a small extractor from yard to yard and

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THE PICTURE WOULD NOT BE COMPLETE WITHOUT SAGE DIRECTLY IN FRONT OF YOU

do the work there. He says that he finds it much more economical to bring the honey home to extract, as he has to make the trips to the out-yard anyway. By using a power-driven extractor and large tank he can do nearly all the necessary work alone, thus reducing expenses to the minimum. The honey house is 30 feet square, with the lower story walls of concrete. The total cost of the building, exclusive of equipment, was about \$1000. There is abundant room for every operation, including storage for his hundreds of extracting supers during winter. A workroom, partitioned off in one corner, can be easily heated and necessary work carried on comfortably in winter.

1912 was a fairly favorable season, and the Aldrich apiaries turned out about 27,000 pounds of honey from the 300 colonies in four yards. In 1913 some increase was made in the number of colonies, and the production jumped to over 40,000 pounds. From the 1913 crop the modern home shown in the picture was built, and it did not take it all either.

The location is apparently above the average, being in the edge of the Missouri river hills. Some of the out-yards are in the hills and some in the bottoms, so that rarely a season fails to give a profitable crop in some of the yards. In case of a failure in one or the other it is not far to move the bees to pasture. There is a considerable acreage of basswood surrounding the home yard from which a heavy yield is occasionally secured. Much of this timber is being cut, so that this will probably not be depended upon very much longer. Sweet clover in large acreage is within reach of one or two yards, and heartsease the main dependence on the bottoms.

There is considerable similar territory entirely unoccupied about 20 to 50 miles to the south of this location, and a few good locations near large towns

which would furnish home markets for an ordinary crop.

Mr. Aldrich does not aspire to greatly increase his present apiaries. He has about reached the limit of one man beekeeping, and his income is sufficient for his needs. With a modern home, the best up-to-date equipment, 20 ton honey crops, and a most interesting family, he has every reason to be content.

Atlantic, Iowa.

Bees and the Colors of Clothing

BY JOHN H. LOWELL.

SOME time ago the writer published a description of a series of experiments, which showed beyond question that a beekeeper dressed in black would receive more stings than one wearing white clothing. While dressed wholly in white, with the exception of a black band of cloth 10 inches wide sewed around my right arm, I opened a hive of bees and gently shook several frames. Immediately many bees attacked the black band, and continued to do so as long as I disturbed them, while not a single bee attempted to sting the left sleeve which was entirely white.

This experiment was repeated many times, and the position of the black band was changed, but the results were always the same—the black band was invariably fiercely assailed, while the white portions of my dress received very little attention. I estimated the number of bees on the black band at various moments at from 30 to 40, and it would be difficult to imagine how they could make greater efforts to sting than they did.

At this point a very natural question was: How would other colors affect the bees? Ticknor Edwards tells us ("The Lore of the Honey Bee," page

40) that during the Middle Ages beekeepers were warned not to wear red in the bee-yard, as this color was especially offensive to the bees. Accordingly red was first selected for experiment. A red band was substituted for the black one, but my clothing was otherwise entirely white. When I removed the cover of a hive and angered the colony, the red band was attacked almost as fiercely as had previously been the case with the black cloth. The white sleeve, meanwhile, received very little attention. The bee-masters of the Middle Ages were thus entirely right in advising against the wearing of red garments. During the past year Dr. Frisch, of Munich, has asserted that bees cannot distinguish red from black.

When a blue band was used instead of a black one, it caused a little more irritation than white, but very much less than black. Yellow and green bands were later successively substituted for black, but the bees paid absolutely no more attention to these colors than they did to white.

The experiments show that a bee-keeper may wear in the apiary white, yellow and green clothing; but should carefully avoid a black or red apparel. Blue is less desirable than white, although much better than black.

Waldboro, Maine.

Some Cute Ideas

BY DR. F. A. BONNEY.

DO NOT doubt but that many oldish men, those who have to wear glasses as I do, are bothered with the sweat running down and mudding up the lenses. This bothered me so in looking for queens or eggs that I discarded my glasses entirely and now use a 3-inch reading glass which I carry in my pocket.

To insure that no moths get into my wax, I use a cream can with a tight cover and pour in a teaspoonful of formaldehyde from time to time. No self respecting miller will tarry where the odor of that chemical exists, so my wax is safe from week to week.

When I want to strengthen a colony of bees I put on a bee-escape, then on that put supers from neighboring hives which are filled with bees fanning honey. These go down, unite with the colony, and then I return the super to where it came from, or any other hive. There is no danger in this way of getting your queen lost, and more bees will remain than if the bees were shaken in front of the hive. Sprinkle a little peppermint water around to stop possible fighting. My supers are all over queen excluders.

To get rid of mice in the bee-yard, I soak wheat in a quart of water in which I have dissolved one dram (60) grains of strychnia sulphate. If you have ever tried to poison the neighbors' chickens you will know that a dose of poison that will kill a man is only a nice tonic for an old scratching hen, but if you have exaggerated ideas about toxic drugs lay down a couple of sticks, scatter the grain between them, and cover with a board. The mice will certainly find it, and they will not go into the

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hive. I found four dead mice in hives this spring, and in no hive evidence of mouse occupation.

I am now sending out copy to papers and the rural magazines extolling honey as a cure for rheumatism. Since I caught my wife, I thought to quit lying, but cannot resist the temptation to copy the Karo Kusses and patent medicine fakirs' methods of making business. "Have you tried the *honey cure* for rheumatism?" is one line I am circulating. I advise one or two tablespoonfuls five times a day, and drink no water for at least one hour after taking a dose. Five tablespoonfuls per family in the United States per day would amount to 50,000,000 ounces, 3,125,000 pounds, or 260,000 gallons, worth that many dollars. In a year that would amount to about _____. Figure it out yourself, and see if it is worth lying about. *Nearly four times* the amount of honey now sold in the United States annually.

To save walking I use a small telescope to look over my decoy hives.

Working with the bees recently, when they were particularly irritable, I thought to try peppermint water on my person and the hives, and to my delight the angry buzzing ceased, and the bees quit stinging. I have not had opportunity to experiment further, but shall do so as soon as I find time. I think the water should be quite strong, say ten drops of the oil to half a pint of water.

Buck Grove, Iowa.

Honey and Biology

BY J. A. HEBERLE, B. S.

(Based on a lecture of Dr. Thoeni, published in the *Schweizerische Bienezeitung*.)

HONEY was highly esteemed in olden times, as well as now, but the reasons for this esteem have undergone some change. The ancients believed that the honey "fell as gentle dew from heaven," and was gathered by the bees. According to the writings of Dioscorides and Plinius, this was believed by the Greeks and the Romans, and seems to have been generally accepted until about the middle of the 16th Century. At that time two Franciscan monks showed that the sweet juice—the nectar—was but a secretion from the plants.

At the end of the 18th Century honey was studied by chemists, who showed that it mainly consisted of three kinds of sugars, principally invert sugar, some cane sugar, a little dextrin, water, formic, acetic, lactic, and succinic acids, also small amounts of albumen, mineral and coloring matters. With this was shown that honey is a very nutritious and very wholesome food, and quite important for the human body.

The study of the preparation of honey by the bee led to the discovery that the honey contained other substances besides those that were shown by chemical analysis. Erlenmeyer and Planta succeeded in showing that in the preparation of honey, cane sugar was converted into invert sugar, and starch into dextrin and sugar. These pecu-

liar substances which caused these changes during the preparation of honey are called enzymes or ferments. Later, Auzinger showed that besides the ferments which made the invert sugar called "invertase," and those which change starch into dextrin and sugar called "diastase," there is still another ferment in the honey called "catalase." This ferment has the power of converting hydrogen peroxide into water and oxygen. Marpmann claims to have found still other enzymatic bodies, but this has not yet been corroborated.

The nature of these ferments is not quite understood; they seem to be bound to the albumen molecules. Only the effect they produce is known; but not how they come into existence; how they are produced. It is only known that they are derived from living cells. The ferments are, for the live process of all plants and animals, of the utmost importance. For instance, in the digestion and nourishing of the body they are indispensable, since without them assimilation is not possible. The ferments are quite susceptible to heat temperatures. A little less than 100 degrees C. injures them, and if the heat continues for a longer period they are destroyed. Since the ferments are derived from living cells, their functions are called biological.

The high esteem of genuine honey as food, dainty, and for its curative property for mankind is well justified from its chemical composition as well as from its biological qualities. This high esteem of honey, the great demand for it, and its price compared with other sweets have been the cause of artificial preparations, substitutes to defraud the consumer. Until recently the examination of honey included the appearance, taste, color, aroma, a

microscopical examination, a quantitative chemical analysis for its principal constituents, dextrose, levulose, sucrose, dextrin, also tests for other substances that were commonly used in adulterating honey, etc.

Since the composition of honey varies considerably in different localities, sometimes even at very short distances, this is especially the case in Switzerland and parts of Germany, the difference as to the time of extracting, etc., it is very difficult by chemical analysis to state positively that the sample under examination is adulterated, because the natural product shows such great variation in its physical and chemical composition.

This task is made the more difficult because the adulterators, *en gros*, have very able chemists to make these artificial products. It is easy for them to mix the principal constituents that can be determined by chemical analysis in the same proportion as they are found in honey. It is easy for them to make the color and the consistency as wanted. To delude as to aroma, some natural honey is mixed with the artificial product, so that it is the most difficult of all food analyses. [A honey examination in Switzerland and Germany seems even more difficult than in the United States.]

The chemical and physical methods often fail to positively prove adulteration. The biological qualities of the honey are a very important criterion, since up to the present it has not been possible to produce these ferments in a pure state, besides they would be so costly that they could not be used for the preparation of artificial honey. The diastase reaction has proved useful in the examination of honey as to its purity.

Markt Oberdorf, Bavaria, Germany.

(To be continued.)



HOME OF B. A. ALDRICH—"THE HOUSE THE BEES BUILT."

American Bee Journal

DR. MILLER'S ANSWERS~

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Bitter Honey

I have about 200 colonies, and on the hives is considerable honey mostly in half-depth frames—not wired. I find that a great portion of it is very bitter. I am at a loss to know what they worked on to produce such a taste in the honey. Last fall they were storing from asters and the bloom froze, yet they stored for several days from the frozen bloom. That honey was not all thoroughly ripened, yet the bees wintered finely. This spring they worked on dandelion, fruit bloom, maples, poplar, basswood, sweet clover, little boneset, and a meadow weed, with a flat white top; people call it "yarrow." Also some reported them working at joints near the roots of red clover. There was some honey-dew, yet I did not see any bees working on it.

I sell most of my honey cut from half-depth frames, and put it in buckets at 15 cents a pound, which is as much as I can get in sections.

I had thought of taking off all their surplus, then extracting the combs, and have them to put back to catch the fall flow, then feed where needed of this bitter honey. Can I clean the combs of this bitter honey so the fall honey will not have this bitter taste?

OHIO.

ANSWER.—We do not know from what source the bees harvested that bitter honey unless it is from the dandelion. We have never seen enough gathered from this source to make a surplus, but it is quite possible that you had enough for that. As to the "yarrow" (*Achillea millefolium*), we have never seen any bees upon it. It is classed among the weeds of Iowa by Prof. L. H. Pammel. Its scientific name, *Millefolium*, meaning "a thousand leaves," comes from the fineness and great number of its leaves. Perhaps some of our subscribers can tell us whether the bees work upon it, and of what flavor is the honey.

There is no doubt that you can extract that bitter honey so as to keep it separate from the next crop. It will surely make good bee-feed.—C. P. D.

Feeding

We are now in the midst of a protracted drought, hardly a flower to be seen. I have filled my bee-feeders with syrup made from cane granulated sugar and placed the feed

in the yard where all the bees can help themselves. Is this method of feeding all right or should the feed be placed in the OKLAHOMA.

ANSWER.—Feeding out in the open is a little more like having the bees gather from the fields; only if other bees are near you they will also partake of the plunder. The stronger colonies are likely to get the lion's share, but you can make that all right by taking filled frames from the strong and giving to the weak.

Queer Actions of Bees

What ails my bees? Quite a number of them emerge from the hive, try to fly but cannot, only hop along. They are all perfect bees, as far as I can see. They act as if they were loaded with honey; but I killed a couple and found the honey sac empty. They are not young bees, neither are they very old.

ANSWER.—It is probably a case of bee paralysis. As far north as you are it is not likely to be a very serious matter, and the trouble will disappear in a few days. If it should seem to increase, send samples of the diseased bees to Dr. E. F. Phillips, Dept. of Agriculture, Washington, D. C., and he will give you all the information needed without charge.

Requeening for European Foulbrood

1. Will it pay to requeen with untested Italian queens for European foulbrood, leaving the bees on their old combs? If not, how is the best way to subdue said foulbrood at this time of the year?

2. How long must old frames of brood comb be kept to be safe to use?

NEW YORK.

ANSWERS.—1. Let me answer the last part of the question first. For a mild case of European foulbrood, supposing a vigorous queen of the best sort is present, the best treatment I know of is to keep the queen caged in the hive for 8 or 10 days. That's all—the bees will do the rest. If the case is a bad one, it's a pretty safe guess that the queen is no longer good. So she should be killed. At the same time that she is killed

a virgin queen of best stock, not more than 24 hours old, should be dropped in the hive or placed on a comb. Instead of that a sealed cell nearly ready to hatch may be given in a cell-protector, or a day or two later without the protector.

Whether the case be mild or severe, it will probably pay to replace the queen with one of best Italian blood, if the queen is not already one of that kind. Italians are in general more vigorous than blacks or hybrids, and there may be also something in the claim that Italians, independent of their vigor, are more nearly immune to European foulbrood than others.

2. I doubt that age alone will make a diseased comb entirely safe. But after it has been kept until the dead brood is entirely dried up, then there is probably not one chance in fifty that there is any danger. And a comb that has been kept 8 or 10 days without any eggs being laid in it is probably as safe as one kept a year.

But remember that we are talking about European foulbrood. I wouldn't want to use a comb affected with American foulbrood if it had been kept 10 years.

Uniting—Wintering—Foulbrood

1. Is it advisable to unite a strong colony with a weak one in July or August or wait until spring?

2. Will a colony that hasn't swarmed winter on the lower story of an 8-frame hive?

3. Is it a sign of foulbrood if the lower story has three dead bees in capped cells. They were full grown, and were the only dead cells found, and when opened had a strong bad odor?

WASHINGTON.

ANSWERS.—1. If the one colony is quite weak, or if you are not anxious to save the queen, then you had better unite now, since there is much danger that a weak colony will not winter through.

2. Yes, a number of my colonies that have not swarmed will have to do it.

3. A little uncertain. If those three are the only ones, and no more follow, then you may decide it is not foulbrood.

Finishing a Super Above Brood-Nest—Dark Honey

1. When a super of unfinished sections of honey is placed under the brood-nest will the bees take the honey and put it in the super above the brood-nest to fill up the unfinished sections.

2. Was the honey in the northern part of the State as dark as ours is down here? Ours is all honey-dew and black.

ILLINOIS.

ANSWERS.—1. In the few cases in which I have tried it, they would not carry it up.

2. In this locality the honey has been very white. I think bees are not so likely to work on honey-dew if they have plenty of flowers from which to obtain a better article. I suspect that in your location there was a dearth of flowers.

Carniolans—Italians—Ventilation—Wintering—Transferring, Etc.

1. By the use of queens I intend to work my apiary into one race of bees, and am at a loss to know the best one for my conditions. It is claimed that the Carniolans will fly earlier, later, and on darker days than the other races of bees; take to the supers more readily than the Italians, produce the whitest wax, and use less propolis than other bees. Some claim that they work buckwheat and like it better than others. Above all they winter the best of all races when kept in a cold climate. My bees will all have to be wintered outside, and the temperature will several times each winter go 20 degrees below zero. The worst thing I have been able to learn against them is their propensity to swarm. What is the truth about the above claims? Would the so-called "jumbo" hive carrying 10 frames



M. E. LACOSS AT WORK IN TONAWANDA, N. Y.

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of standard length and a bit over 11 inches deep, help an' about the swarming if the hive was equipped with a ventilated cover?

2. Which type of Italians is best for New Hampshire, the golden or the leather colored? Will either or both work the red clover? Which will winter the best?

3. I judge ventilation is an important thing in controlling swarming. How is it best done, through the bottom-board, or by using a hive cover like the Root ventilated gable cover, and regulating the size of entrance? Are there better ways?

4. Would you judge a single-walled dove-tailed hive like the jumbo mentioned above to be a good one for me to start with. I do not like to pay the price of the double-walled ones. What about wintering out doors in this hive? Can I do better than to get telescoping cases to put over the hives in winter? Should they go on with or without the hive cover being on, and should anything be used between the hive and the case? Have several old out-buildings on the place, some with an apology for windows and some without. Would these be better for the bees than to be left outside? They would break the cold winds and make temperature changes more gradual. If better to put in here would you advise the cases? How should the entrance be left for this kind of wintering?

5. What is the proper fuel for the smoker?

6. What is the best way to transfer bees from an old-fashioned hive to a modern frame hive? Is there any satisfactory way to do it without patching up the old combs into the new frames?

7. How could I best add a weak colony in an old-fashioned hive to a small colony in a modern frame hive? In transferring where the old combs are patched into the new frames, should the remaining ones be filled with foundation? Should a division-board be used and moved as the foundation is accepted?

8. I have heard that the best way to put foundation into the sections was to put a narrow piece at the bottom and a piece at the top wide enough to almost reach the bottom one. Is that right? How can I make the top piece hang straight down, or will gravitation hold it there if once bent down?

NEW HAMPSHIRE.

ANSWERS.—1. It is a very difficult thing to get at the real truth about the different kinds of bees. One man says he has found Carniolans superior to Italians; another says they are inferior, and both may be honest in their opinions. The first has had unusually good Carniolans and unusually poor Italians, while the second has had just the reverse. For Carniolans are by no means all alike, neither are Italians. Take the two races as a whole, and I doubt whether all or any of the claims to superiority that you have mentioned will hold good. The fact that the great majority of practical beekeepers keep Italians speaks with some emphasis. The large hive you mention would have some effect in keeping down swarming with any race of bees. But you cannot rely too much upon it. One year a colony in a jumbo hive was the very first to swarm for me.

2. A good golden is better than a leather-colored, and vice versa. On the whole I should prefer to take the chances on the leather-colored. Probably no difference in wintering.

3. Give ventilation at both top and bottom, and also in between. This last you can hardly accomplish if you are running for comb honey, except that you can slide the bottom super forward so as to leave a ventilating space of about $\frac{1}{4}$ -inch at the back end. If you extract you can "stutter" the stories: The first story over the brood-chamber shoved forward so as to leave ventilation at back end, the next story shoved back, the next forward, and so on.

4. Like enough the hive mentioned would suit you all right. It does not matter so much what the outside protection, and it is better to use packing. The hive cover may be on or off according to convenience. But I

wouldn't advise you to winter in a building above ground. To be sure, some make a success at it, but most do not.

5. It's largely a matter of convenience. Any old thing that will burn is likely to answer all right, provided it is easily obtainable. Probably nothing is better than dry hardwood chips. A favorite with some is the greasy cotton waste that is thrown away after being used in machine shops or on locomotives. Then there is bark, planer chips, cowdung, cotton rags, etc.

6. Wait until the colony swarms, and hive the swarm in an approved hive. Twenty-one days later drum the bees out of the old hive and add them to the swarm; then chop up the old hive and melt up the combs. Or, split up the hive and brush the bees off the pieces of comb as you cut them out.

7. Drum out the weak colony and add it to the other. The bees will unite more kindly if one hive be set over the other for three or more days, with wire-cloth between them. Yes, fill out the space with frames filled with foundation, and no division-board or dummy will be needed.

8. Use a bottom-starter $\frac{5}{8}$ -inch deep, and a top stater to reach within $\frac{1}{4}$ inch of it. Gravitation will make it hang straight.

Excessive Swarming—What to Do

Last spring I bought a colony of bees and was very anxious to have them swarm. The first swarm issued July 13, July 20, the mother colony swarmed again. This swarm covered six frames. On July 24, the third swarm issued from the parent colony.

A week later I opened the parent colony and found that the bees had done nothing in the super. The body of the hive was full of honey, and I found three queen-cells. Two of these I destroyed. The cap of the third seemed loose, and soon the queen crawled out, at least I thought she was the queen, though she looked like any other bee. Do you suppose I have left the colony queenless?

Swarm No. 1 has made lots of honey, while the other two swarms and the parent colony have made nothing. Had I better unite these and how, or would it be better to give them frames of honey from the other hive?

Should I get new queens for the two later swarms and for the original colony? Should

I go over the combs every 10 days and cut out queen-cells?

NORTH DAKOTA.

ANSWER.—There is nothing unusual in the program your bees have followed. The mother colony having sent out three swarms has not bees enough left to do anything in the super, and all the bees are crowded into the brood-chamber. Neither are the second and third swarms strong enough to do much, the first swarm being the only one strong enough to do super work.

When a colony prepares for swarming, it starts quite a number of queen-cells, and you find what were left after the last swarm issued. It is not likely that your cutting out those last cells made any difference about swarming, for it is a rare thing for the fourth swarm to issue. You may or may not have made the colony queenless by cutting out the cells. If the bee that came out of the cell was a queen, then the colony is queenless, since you cut out the other cells. But you saw the bee that came out of the cell looked just like any other bee. It is quite possible that it was a worker. Sometimes a worker crawls into a queen-cell after the queen has left it, although the capping of the cell looks as if the queen has not yet emerged. If that was the case, then the queen was left in the hive and the colony is all right. You cannot be certain about the queen by the carrying of pollen. If you do not find eggs in the hive about 10 days after the last swarm issued, or at least in two weeks, you may decide the colony is queenless, in which case you will give it a queen, unless you prefer to unite with it the weakest afterswarm. The chances are that both afterswarms have queens all right. The likelihood is that they will build up without any help from the first swarm, which can be left undisturbed at its work of gathering honey. Of course, if the bees do not gather enough for winter you will have to feed.

It is not likely you will have any difficulty in telling a queen when you see one, by its greater size, especially greater length.

No need to go over your hives for queen-cells now, after swarming is over.

REPORTS AND EXPERIENCES

Hardly Make Living

Honey crop will be short this year; in fact, there will be none here. Bees will hardly make a living.

FRANK SHUPE.
Mazon, Ill., Aug. 1.

Condition of Bees in Eastern Illinois

It has been very dry. The corn will not yield 25 percent of a crop. In some places it is fired to the top. We had no rain from the middle of May till Aug. 10, when we had a good shower, but it is too late for the bees.

A neighbor who had 8 colonies in the spring has only one left. They left their hives. The beekeepers who do not feed their bees will go out of commission.

I started inspection work at Donovan, found one foulbrood colony. I found three in Watseka, eight in Crescent City, none in Gilman. In this place many hives had surplus honey. One man had several cases ready to take off. The reason of this is that near Gilman there is a field of about 75 acres of sweet clover.

In Lodi, bees were holding their own, no disease. In Paxton, I found two cases. At Hooperston, I found one case, west of town. Mr. G. T. Willis, on the east, has an apiary of 30 colonies, all golden, which is a credit

to Hooperston. In fact, it is the neatest and best kept yard I have seen.

In Martinton, in one yard of 20 colonies, I found 19 diseased; in another yard of 5 colonies, 3 were diseased. That was the worst I ever saw. They spend all their time reading the war news and neglect their bees.

J. H. ROBERTS, Deputy Inspector.
Watseka, Ill., Aug. 15.

Half a Crop for Nevada

Up to the present, only the strongest colonies have gathered any surplus. The season is poor. Alfalfa, which is the principal source, has been badly killed down by severe frosts and scorching heat. I think we will do exceedingly well if we get half a crop.

J. E. PATTON.

Halleck, Nev., July 21.

Bumper Crop for Kentucky

The honey crop has been a bumper one here this season. Bees came through winter in fine condition. We use no flour here. In early spring the soft maples bloom, with just a few days of sunshine, then pear, peach, willow, apple, persimmon, locust,

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white clover and chestnut all bloom in rotation. Basswood, sumac, sourwood, white alder, and various other flowers furnish nectar until cold weather. Bees go into winter with a full supply of stores.

I winter out-of-doors, and rarely lose a colony. My best colony stored 200 pounds of comb honey this year, which sold at \$20 per hundred; the rest averaged about 100 pounds. I expect about 50 pounds per colony from the fall flow, which is generally heavy. The fields before frost are a solid bank of flowers. Some colonies store more than 150 pounds from this source.

Gimlet, Ky., July 21. CECIL WHITT.

Crop Report—Pleasant Summer in California

Honey is still coming in on many southern California ranges, and will probably reach 60 percent of a crop over the unirrigated sections.

The summer has been one of the most pleasant I have experienced in my 18 years of California beekeeping. Honey is of good body, nice flavor, but not as white as that produced some years ago.

Corona, Calif. L. L. ANDREWS

Discouraging

I have 55 colonies of bees. They have done but little good this year. We had no white clover, and it is dry. I think they will not gather any honey this fall. I haven't taken any off yet. My bees wintered good, and were in good shape this spring. Swarming has not bothered much. I am discouraged, but will not give it up; will try again.

Ilasco, Mo., Aug. 12. S. P. YOUNG.

Too Dry in Illinois

My bees were strong in the spring, and started to swarm early, as I had the first swarm May 11. I have nothing but Italians, and there are no bees around this part of the country for miles. I run my bees for comb honey, as I sell all my honey at home. The weather in Illinois has been too dry; but the second crop of red clover is now blooming, and the bees are working on that.

L. A. TORNQUIST. New Windsor, Ill., July 27.

125 Pounds Average

We had a short honey flow from clover and basswood, but our bees were in excellent condition, and our 16 frame colonies averaged 125 pounds per colony of the finest quality of extracted honey, with plenty yet in the hives for winter. We seldom get any honey after basswood. The rainfall has been light, and a severe drouth is damaging young clover; alike is our main dependence.

J. E. HAND. Birmingham, Ohio, Aug. 12.

A Thousand Pounds from 70 Colonies

My bees have given me very little surplus this year. It has been very dry here and very little clover. The bees are very strong, and I think they will get plenty of winter stores. I had very few swarms, though the hives were full of bees. From 60 colonies, spring count, I will have about 1000 pounds of honey, most of it dark, and have increased to 100. Hoping for a better crop next year, I will try and be content.

EDWARD T. KNOLL. Clarksburg, Ont., Aug. 13.

Fire Blight Alarming Orchardists in Yakima Co., Wash.

In Yakima Co., Wash., there are 55,000 acres set to orchard. Fire blight made its appearance about three years ago. Orchardists were warned of its existence, and urged to use every effort to stamp it out, and a fairly vigorous effort by resident owners has been made to eradicate it, but at this time it is recurring to a more alarming extent than at any previous time. Orchardists are thoroughly alarmed. In the list of agencies that transmit the bacteria of blight they have placed the honey-bee, and naturally the apple raiser is getting hostile. They are holding meetings and organizing so-called protective leagues, or rather clubs.

At the request of the Grandview orchardists, Gov. Lister attended a meeting, and it was reported in a local paper he stated that

he believed they would be justified without warrant of law in going to the orchards of owners who refused to combat the disease, and cut them down and burn them.

I am informed that at one of these meetings one of the speakers made the statement that he knew of a way to get rid of the bees, and that it was to spray with an arsenical solution when the trees were in full bloom that an apiary of 40 colonies had been taken care of in that way near Sunnyside. Bees in the neighborhood of Sunnyside were badly injured by spray this season, but so far as I know no colonies were destroyed.

We are too inclined to be satisfied if it is the other fellow's ox that is being gored.

During the season of 1911, a pear tree in a small orchard owned by the writer began to blight. Taking the view commonly accepted that it was due to a transmissible organism, I watched the tree closely, cutting off the diseased limbs from time to time and burning them. An apiary of about 80 colonies of bees stood 8 or 10 rods distant, and at no time did I see a single bee visit the diseased tree, and while this does not prove that bees do not carry the infective agent of blight, yet it is just as conclusive as the prevalent belief that they do. What we need in all cases preceding actual proof is men with open minds, minds that refuse to accept suggestions or be swayed by beliefs.

A. E. BURDICK. Sunnyside, Wash., June 8.

The Boyum Escape Improvement

I notice in the August American Bee Journal a bee-escape board improved by Geo. A. Boyum. A similar device was illustrated in some of the journals 12 or 15 years ago. I don't remember the originator, but I remember the pleasure I felt in making an improvement by running a strip from each corner of the board across to the hole in the escape; a trial quickly convinced me that supers were cleared no sooner than before, and others reported the same result. As an amateur, I suggest that when the first frightened bee finds the way to safety through the escape, her fanning wings instantly send the news throughout the supers and a line of march starts immediately for the opening, and with or without the device the supers will be cleared as fast as the capacity of the escape will permit, or as the bees desire to leave.

E. M. COLE. Audubon, Iowa, Aug. 17.

125 Pounds Average

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

PHELPS' Golden Italian Queens will please you.

FOR SALE—Untested Golden Italian queens 60c each; 4 hybrids, \$1.00. J. F. Michael, Winchester, Ind.

BEES AND QUEENS from my New Jersey apriary. J. H. M. Cook, 1 Atf 70 Cortland St., New York City.

FOR SALE—Choice Golden Queens that produce Golden bees equal to any. Wm. S. Barnett, Barnett's, Virginia.

LEATHER-COLORED Italian Queens for sale. Send for price-list. Geo. B. Howe, Black River, N. Y.

PURE TUNISIAN QUEENS, tested, \$1.00; 2-lb. bees with tested queen, \$4.00. Safe arrival guaranteed. Lenole, Nabeul, Tunis.

REDUCED PRICES for August and September. Untested queens of my 3-banded Italian stock. One for 70 cts.; 6 for \$3.00; 12 or more at 60 cts. apiece. No disease and no better queens at any price. Full colonies and several apiaries for sale.

H. D. Murry, Mathis, Tex.

THREE-BANDED Italian Queens, bred to business. Satisfaction guaranteed. Untested, 75 cts.; six, \$4.25. Chas W. Zweily, Lemont, Ill.

QUEENS OF QUALITY—Three-band leather color. Unit, 50 cts. each; sel. unit, 100 cts. each. A few sel. tested at \$1.00. Satisfaction guaranteed. J. I. Banks, Liberty, Tenn.

DURING Sept. I will sell untested queens of Robey stock mated to Howe's strain of drones at 50 cts. each; pure mating guaranteed. D. G. Little, Hartley, Iowa.

CAUCASIAN and CARNIOLAN queens from the original importer. See larger adv't. Frank Benton, P. O. Box 17, Washington, D.C.

UNTESTED Queens, 75c each; \$7.50 per dozen. Nuclei, \$1.25 per frame. Bees, \$1.50 per pound. Full colonies, 8-frame, \$6.50; 10-frame, \$7.50. Stover Apiaries, Mayhew, Miss.

FOR SALE—Fine Italian Queens. See my large ad. in this issue. J. F. Archdekin, Rt. 7, St. Joseph, Mo.

ITALIAN Queens for sale. Untested, 90 cts; six for \$4.75. All queens are reared from my imported mother. Jul. Buegeler, Rt. 1, New Ulm, Tex.

1914 QUEENS—Moore's strain of leather-colored Italians. In April at 75c. Bees by the pound and Tested queens. Write us for prices on nuclei. Address, Ogden Bee & Honey Co., Ogden, Utah.

QUEENS, improved Red Clover Italians, bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, \$8.00; Select, \$1.00 each; dozen, \$10. Tested Queens, \$1.25; dozen, \$12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

QUEENS—10 percent discount for orders received before May 1, to be filled in May and June. Tested, \$1.00; untested, 75c. Dead ones replaced free. 2 Atf S. Click, Rt. 2, Box 16, Mt. Jackson, Va.

WE WILL be in the field with good Italian Queens in June for \$1.00 each; 6 for \$5.00. Two-frame nuclei in June without queen, \$2.50; with queen, \$1.00 extra. D. J. Blocher, Pearl City, Ill.

NORTHERN-REALED Queens of Moore's strain of leather-colored three-banded Italians. After June 15, untested, \$1.00; 6 for \$5.00; 12 for \$10.00. Ramer & Gluen, Harmony, Minn.

PHELPS' Golden Italian Bees are hustlers.

ITALIAN QUEENS, 5-banded, for sale. Ready April 15. Untested queens, 75c each, or \$7.25 per dozen. Safe arrival guaranteed.

W. W. Talley, Queen Breeder, Rt. 4, Greenville, Ala.

FOR SALE—1913 hatch sel. tested, Aug. \$1.00 each; Sept., 75c each as long as they last; wish to replace with 1914 for 1915 sales. Will sell a good breeder for \$1.50. E. E. Mott, Glenwood, Mich.

HIGH Grade Queens by return mail. Tested, \$1.25; warranted, 75c each; choice breeding queens, \$2.50 each. Italian Carniolan or Caucasian. Virgins of any of the above strain, 3 for \$1.00. Stanley & Finch, 1451 Ogden Ave., Chicago, Ill.

PURE Golden Queens, the best that twelve years can produce. Untested, \$1.50 each. Select tested, \$3.00 each. Breeders, \$5.00 to \$50. Send for booklet on "Bees and Diseases." Geo. M. Steele, 30 South 40th St., Philadelphia, Penna.

QUEENS by return mail or your money back. Guaranteed purely mated. J. E. Hand strain of 3-banded Italians. Bred for gentleness, honey gathering and wintering. State inspector's certificate. Select untested, one, 75c; six, \$4.00; 12, \$7.00. Tested, one, \$1.00; six, \$5.00; 12, \$10.00; Select tested, one, \$1.25; six, \$7.00; 12, \$13. Breeders, \$4.00 each. Write for price on large orders. Safe delivery and satisfaction guaranteed in U. S. and Canada. Ten percent discount on 30 days' advance orders. Reference, First National Bank. J. M. Gingerich, Arthur, Ill.

American Bee Journal

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, \$1.00 each; Tested \$2.00; Breeders, \$5.00 and \$10.00. Attn J. B. Brockwell, Barnets, Va.

THE BANKSTON Bees and Queens are as good as the best. Golden, Three-band and Carniolan. Tested, \$1.00 each; untested, 75c. Queens ready to ship April 15. Bees, per pound, \$1.50. Nuclei, per frame, \$1.50. Write us for prices on large lots of queens. Try us and be pleased.

Bankston & Lyon, Box 141, Buffalo, Tex.

GOLDEN and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, \$2.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., \$1.50; Nuclei, per frame, \$1.50. C. B. Bankston, Buffalo, Leon Co., Tex.

FOR SALE—Three-banded Italian Queens, bred from the best honey-gathering strains, that are also hardy and gentle. Untested queens, 75c; six, \$1.25; 12, \$8.00. Tested, \$1.25; 6, \$7.00; 12, \$12. For select queens, add 25c each to above prices. Breeding queens, \$3.00 to \$5.00 each. For queens in larger quantities write for prices. Robt. B. Spicer, Wharton, N. J.

PHELPS' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, \$1.00; six, \$5.00; Tested, \$3.00; Breeders, \$5.00 and \$10. C. W. Phelps & Son, 3 Wilcox St., Binghamton, N. Y.

QUIRIN'S Famous improved Italian queens are northern bred and extremely hardy; over 20 years a breeder. Colonies, Nuclei and bees by the pound. Ask for Circular, it will interest you. H. G. Quirin, Bellevue, Ohio.

FOR SALE—We offer our best Italian bees in 10-frame hives, from one to carload f. o. b. here, or in yards of 100 or more complete with fixtures and location. Cash on reasonable time. If preferred, will rent on shares several years with privilege to buy. Particulars on request. Spencer Apiaries Co., Nordhoff, Calif.

HONEY AND BEESWAX

"NULL'S FAMOUS MELILLOTUS HONEY." Sample for stamp. Null Co., Demopolis, Ala.

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co., 6A1st 173 S. Water St., Chicago, Ill.

FOR SALE—Orange honey in 60-lb. cans, 2 in a case, at 9c per pound. Sample free. James McKee, Riverside, Calif.

FOR SALE—Horsemint honey, also dark from Huckleberry. Put up in new 60-pound cans. Write for prices. A. L. Krueger, New Ulm, Tex.

FOR SALE—Light extracted honey; two 60-pound cans to case, new cans, 8½ cts.; in 10 case lots at 8 cts. per pound, f. o. b. here. H. G. Quirin, Bellevue, Ohio.

LIGHT AMBER honey 8c per lb. White, 10c, two 60-lb. cans to a case. Sample, 10c. I. J. Stringham, 105 Park Place, New York.

FOR SALE—Raspberry, Basswood No. 1 white comb, \$3.00 per case; fancy, \$3.25; 24 Danz. sec. to case, 9 cases to carrier. Extracted, 120-lb. cases at 9 cts. Wiley A. Latshaw, Clarion, Mich.

RASPBERRY HONEY—Left on the hives until it was all sealed and thoroughly ripened. It is thick, rich, and delicious. Put up for sale in new 60-lb. tin cans. Price, \$6.00 per can. Sample by mail, 10 cts., which may be deducted from order for honey. Elmer Hutchinson, R. D. 2, Lake City, Mich.

THE BEEKEEPERS' REVIEW is now owned and published by the honey producers themselves. It is the paper all honey producers should support. Eight months' trial subscription, beginning with the May number, for only 50c. Sample copy free. Address, The Beekeepers' Review, Northstar, Mich.

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BETTER HIVES FOR LESS MONEY—Beekeepers' supplies and standard-bred Italian bees. Write for catalog. A. E. Burdick, Sunnyside, Wash.

THE A. I. ROOT COMPANY'S Canadian House, Dadant's Foundation, Poultry, Supplies, Seeds. Write for catalog. The Chas. E. Hopper Co., 185 Wright Ave., Toronto, Ont.

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ORIGINAL and unique honey advertising post cards (photos). Write Dr. Bonney, Buck Grove, Iowa, for samples.

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I WILL show any bee man who can raise about four thousand dollars, how to live and grow richer every year without hard labor. Write me. John M. Morgan, Ordway, Colo.

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FOR SALE—Single Comb Buff Orpington eggs for hatching, pure bloods; \$1.00 per 15 or \$5.00 per hundred. Satisfaction Guaranteed. W. H. Payne, Hamilton, Ill.

FOR SALE

FOR SALE—Having sold my farm, I now offer for sale 50 colonies of bees in 10-frame hives, with or without supers or supplies. No foulbrood. C. S. Russell, Pine City, Minn.

WANTED

WANTED—From 4000 lbs. to carload of comb and extracted, Iowa, Wisconsin or Michigan honey. Quote me prices. W. H. Hyde, New Canton, Ill.

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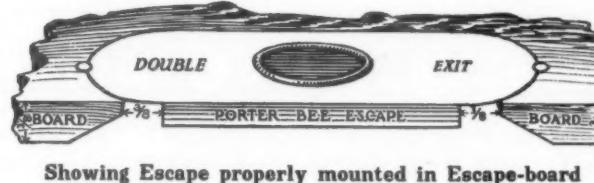
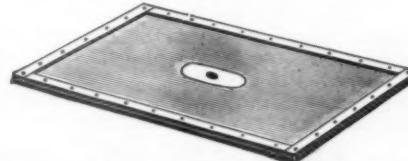
For getting bees out of the super automatically before removal from the hive. It is a combination of speed, safety and satisfaction that saves honey, time and money for the user. As a labor-saving device it has no superior. Avoids "breaking the back" in shaking heavy supers to get the bees out. Leading beekeepers the world over use these Escapes and give them their unqualified endorsement. No well-regulated apiary can afford to be without bee-escapes any more than it can afford to be without a bee-smoker.



Single Escape. Prices: Each, 15 cents; per dozen, \$1.65



Double Escape. Prices: Each, 20 cents; Escape-board with Porter Escape in Per dozen, \$2.25 position for use



All Porter Escapes fit the same size opening in Escape-board. For sale everywhere by dealers in Beekeepers' Supplies. If you have no dealer, order from factory, with full instructions.

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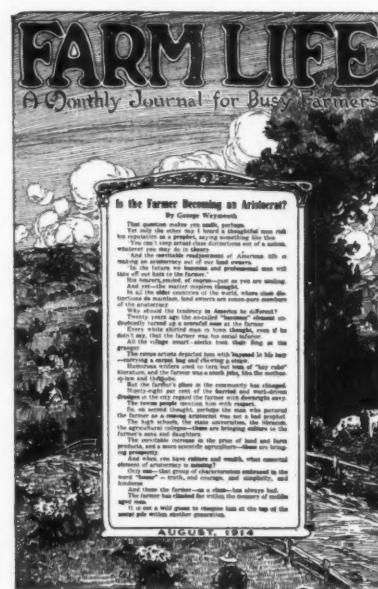


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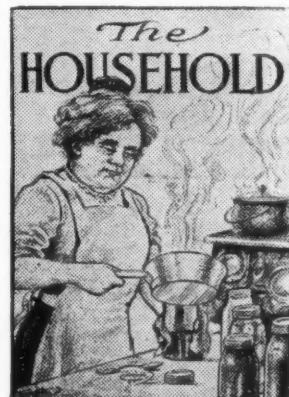
AMERICAN BEE JOURNAL, Hamilton, Illinois



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Bees by the pound and full colonies From a superior strain of **three banded Italians**. Hardy, gentle, and they are hustlers. Guaranteed to please you.

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"Langstroth on the Honey-Bee" (Latest edition, \$1.20)	\$1.00
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Or all the above in one order to one address for only \$3.00. (The retail price of the bunch is \$4.95.) Address,

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Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, \$1.25; 5 for \$5.00; Breeders, each \$5.00. Address

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PHARR WANTS YOUR ORDERS FOR QUEENS

Goldens and 3-Banded Italians

For twelve years we have asked for your orders and we have gotten all we could fill and sometimes more. But we have ever tried to serve you right, and will guarantee similar treatment in the future. Prices of Untested, \$1.00; Tested, \$1.50; Breeders, 3.00 to \$5.00. Write for prices in large quantities.

2-frame Nuclei, queenless, \$2.25
3 " colonies with queen \$3.25 } F. O. B.
10 " colonies with queen \$6.00 } Berclair.
Orders booked now—delivery last of May or June

John W. Pharr, Berclair, Texas

Try My Bright ITALIAN QUEENS

This is what one customer writes:

JOSEPHINE, TEX., June 16, 1913,
MR. M. BATES, Greenville, Ala.
Dear Sir:—I am sending you \$0.00 for which please send me 12 Untested Golden Italian Queens. The queens you sent me are fine, and old bee rearers say they are the finest they ever saw. They have surely made a reputation here for you. Several men say they will order queens soon.

A. M. MORRISON.

I have other letters that say the same. Selected Untested, each 6c; Tested, each 12.25; 2-frame nuclei, each \$2.50. I guarantee safe arrival and perfect satisfaction.

M. BATES, Route 4, Greenville, Ala.

A RCHDEKIN'S FINE ITALIAN QUEENS

Three-banded. Bred for persistent profitable production of honey. Prolific, hardy, gentle. The bee for pleasure or profit. One customer says, "Your queen soon had her 10 frames running over with bees that are hustlers. No disease. Satisfaction guaranteed. Orders filled promptly. Ready May 20. Untested, \$1.00 each; 3 for 2.75; 6 for \$5.00; doz., \$9.00. Select tested, \$2 each."

J. F. Archdekin, R. R. 7, St. Joseph, Mo.

SPECIAL DELIVERY

During this month we shall double our usual efforts in points of delivery and service. We carry nothing but the Root make, which ensures the best quality of every thing. We sell at factory prices, thereby ensuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to beekeepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

New 64-Page Catalog

Our new 1914 catalog contains double the pages of former editions, and requires extra postage. It is filled from cover to cover with complete lists of goods in every line to meet every requirement of beekeepers. If you haven't received a copy when you read this, be sure to ask for one. It will save you money.

New Features for 1914

Few radical changes have been made this season. It should be noted, however, that we will send out with regular hives, unless otherwise ordered, the metal telescopic or R cover with super cover underneath. The side rail for the bottom-board will be extra length so as to overcome the difficulty experienced by some last season. Improvements have been made in extractors. We shall carry a very heavy stock so orders may be filled with our usual promptness. Write us your needs. Early-order discount this month 2 percent.

C. H. W. WEBER & CO.

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